Lower Snake River Dams Transportation Study

Technical Advisory Committee Meeting 9

December 11, 2025

Agenda

Update on TLC Model and Scenario Descriptions

Model Results for Future Scenarios

Results Comparisons

Key Metrics

Next Steps

WSDOT

Update on TLC Model and Scenario Descriptions

Select Changes to Model Since Last TAC Meeting

Split township centroids into multiple sub-centroids

Corrected road network volumes using updated road network speeds and adjusted unpaved road speeds

Fixed rail network track issues to ensure correct connectivity

Updated facility capacities for barge terminals and rail shuttle terminals for each scenario

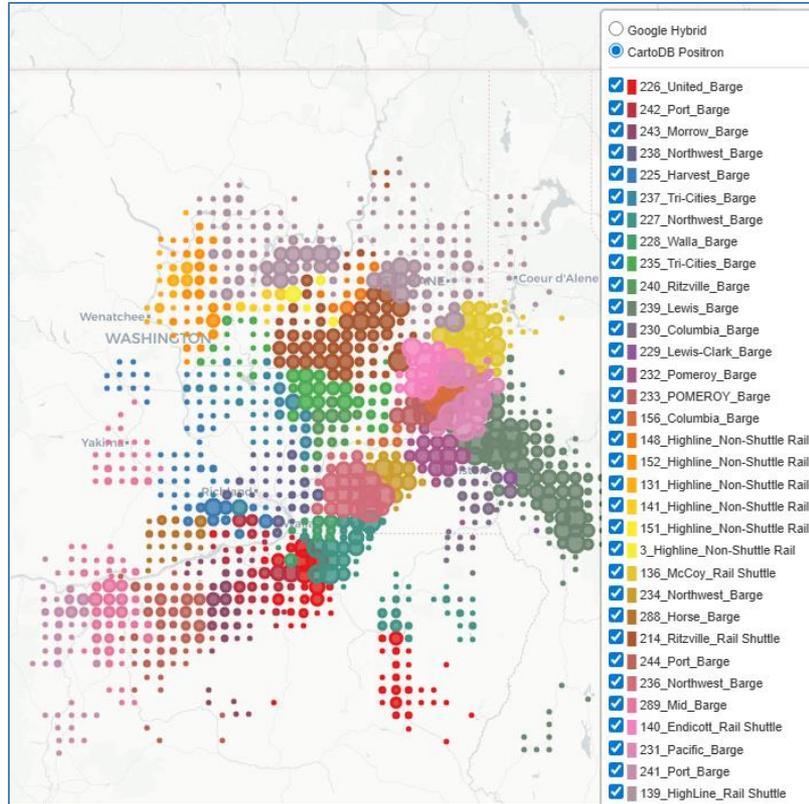Updated throughput capacities for barge terminals and rail shuttle train terminals

Shared fertilizer and wood model results with model documentation

Revised barge, rail, and truck rates based on stakeholder feedback and freight data sources
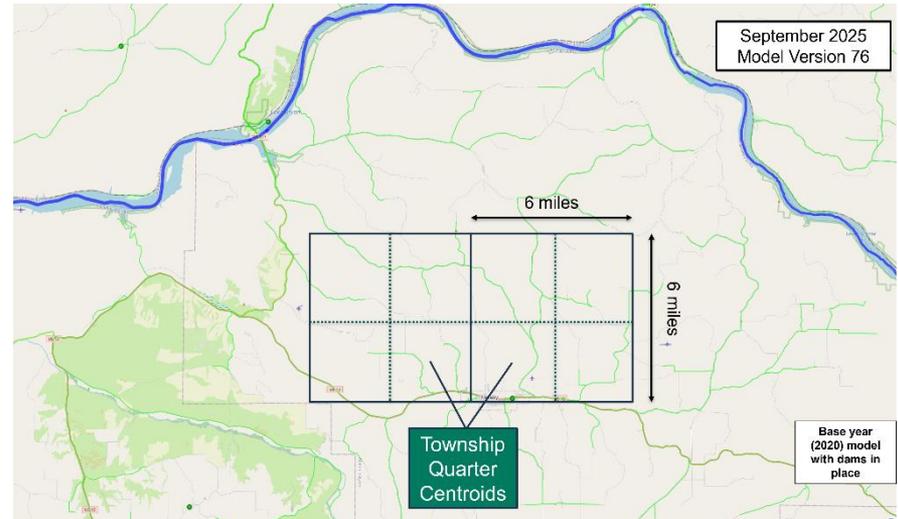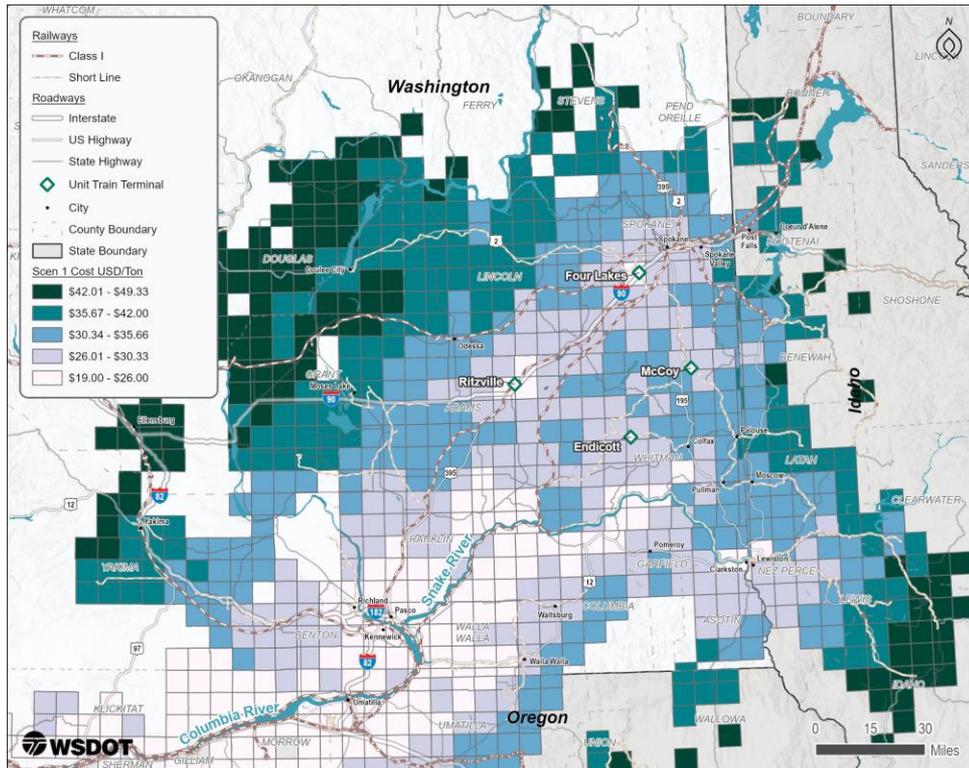

Comparisons of facility volumes in model to real-world data

TLC Model Calibration and Validation

Catchment areas of wheat used to ensure that barge and rail facilities in TLC model approximate real-world market capture

TLC Model Calibration and Validation

Transportation costs per ton at township level

TLC Model Calibration and Validation

Pool	TLC Model (kTons)	Target (kTons)	Percent Difference
Lower Granite	1,183	1,147	3%
Little Goose	1,039	1,110	-6%
Lower Monumental	445	408	9%
Ice Harbor	537	515	4%
McNary Lock & Dam	1,095	1,131	-3%
John Day	469	462	2%
Dalles	201	208	-3%
Bonneville	78	80	-3%
Total	**5,047**	**5,061**	**0%**

Tons of wheat in each pool are very close to the target for pool tons based on USACE data – an indication of good model performance

TLC Model Calibration and Validation
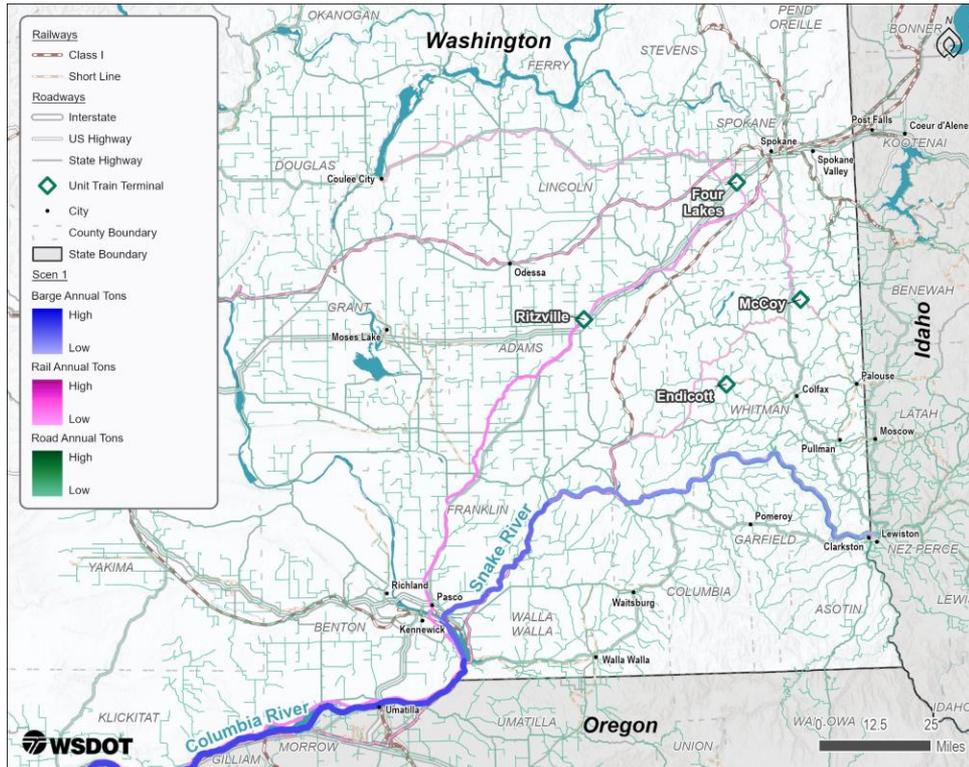
Model results reflect the roughly 65-35 barge-rail split for flows

Model Iteration Steps

1. Develop first draft of model structure
2. Calibrate model
3. Run model
4. Validate model results
5. **Review model results – where we are today**
6. Consider alternative model assumptions such as changes in
   - Terminal locations
   - Services provided at terminal locations
   - Capacities and throughputs of terminals
   - Capacities of rail track and road infrastructure
7. Repeat Step 2 with model with assumptions, if needed
8. Complete model

Scenarios 1 – 4: Base and Future Year with and without Dams

Scenario 1: Base year (2020) model with dams in place

- Discussed at previous TAC meeting
- Showed catchment areas for each port and rail terminal
- Examined lock volumes, pool volumes, and river volumes relative to existing data

Scenario 2: Base year (2020) model with dam breaches

Scenario 3: Future year (2045) model with dams in place

Scenario 4: Future year (2045) model with dam breaches

Scenario 3: Growth Rates 2020-2045

Commodities Within Study Area

Commodity	Annual Growth Rate
Wheat	1.29% (USDA)
Fertilizer	1.35% (based on future acreage)
Wood	0.28% (based on historical growth)

Background Freight Traffic

Mode	Annual Growth Rate	Source
Truck	1.4%	WSDOT counts
Rail	2.25%	FHWA FAF
Barge	N/A	N/A

WSDOT

Goals for Mitigation Scenarios

✓ Minimize transportation costs and traffic impacts

✓ Maintain system reliability
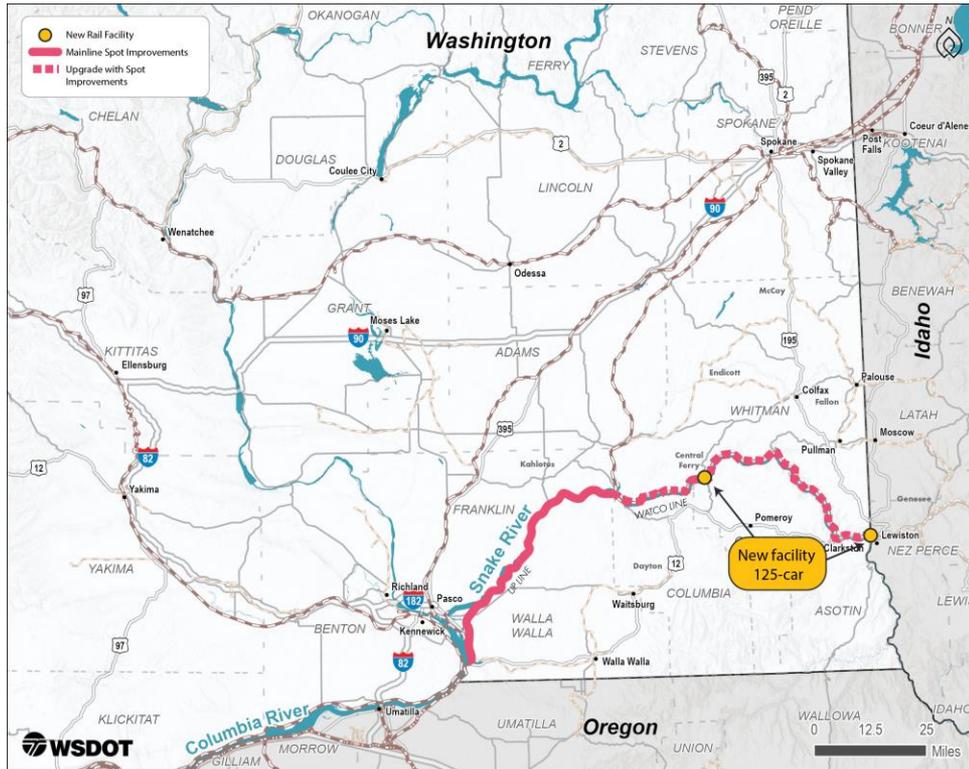
✓ Preserve competitive balance

✓ Replace as much lost capacity as reasonable

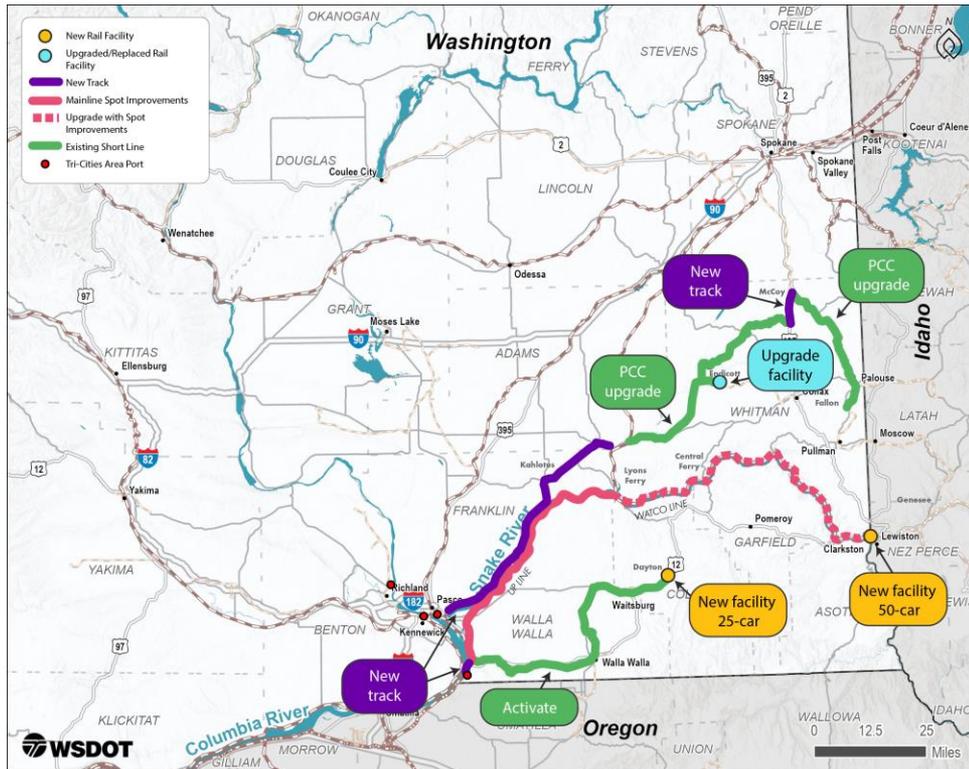✓ Provide decisionmakers with alternatives to consider

Scenario 5: Two New Unit Train Rail Terminals

New terminals at Lewiston/Wilma and Central Ferry

Improve WATCO and UP rail lines between Lewiston/Wilma and Tri-Cities

Scenario 6: Shortline Rail to Tri-Cities
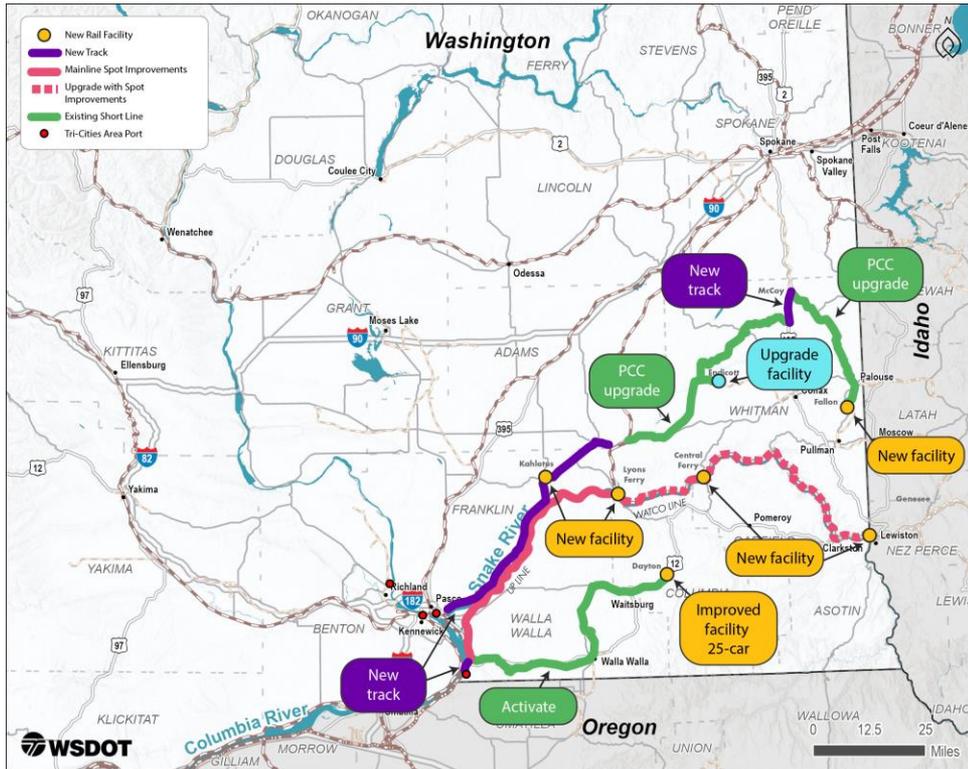

New shortline rail terminals
- Dayton
- Lewiston/Wilma
- Endicott upgrade

New track
- Columbia Plateau Trail
- Thornton to McCoy
- Wallula connection to Dayton

Track improvements along WATCO and UP line on river

Scenario 7: Many Solutions

New rail terminals

- Lewiston/Wilma
- Central Ferry
- Lyons Ferry
- Dayton
- Kahlotus
- Endicott upgrade

New track

- Columbia Plateau Trail
- Thornton to McCoy
- Wallula connection to Dayton

Track improvements on WATCO and UP line along river

Model Results Future Scenarios – Tons for all Modes, Barges, Trains, Trucks

Annual Tonnage Flows

Scenario 1: Annual Tons for Barge, Rail, and Truck
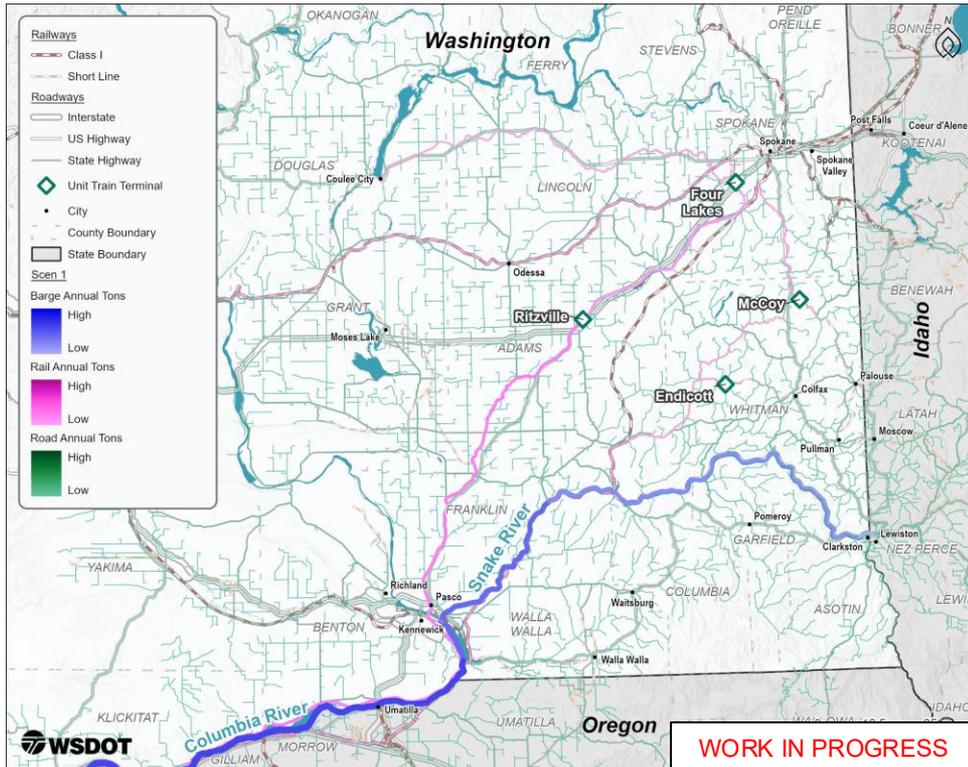
Scenario 1 represents truck, rail and barge flows today

WORK IN PROGRESS

S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions

Scenario 3: Annual Tons for Barge, Rail, and Truck
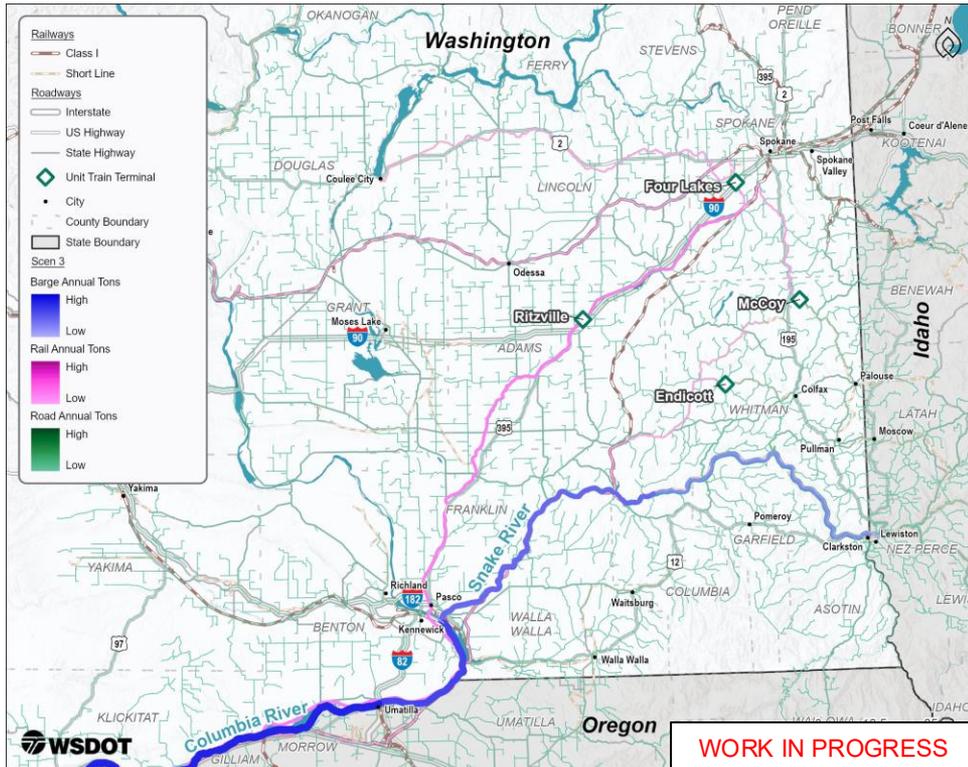
Scenario 3 has slight increase in truck and rail volumes compared to Scenario 1

WORK IN PROGRESS

| S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions |

Scenario 5: Annual Tons for Barge, Rail and Truck

Scenario 5 has increased rail flows along the Lower Snake River and UP/BNSF mainlines

Columbia River is still moving wheat via barge

WORK IN PROGRESS

S1 – 2020 with dams | S3 – 2045 with dams | **S5 – New unit train terminals** | S6 – Shortline to Tri-Cities | S7 – Many solutions

Scenario 6: Annual Tons for Barge, Rail and Truck
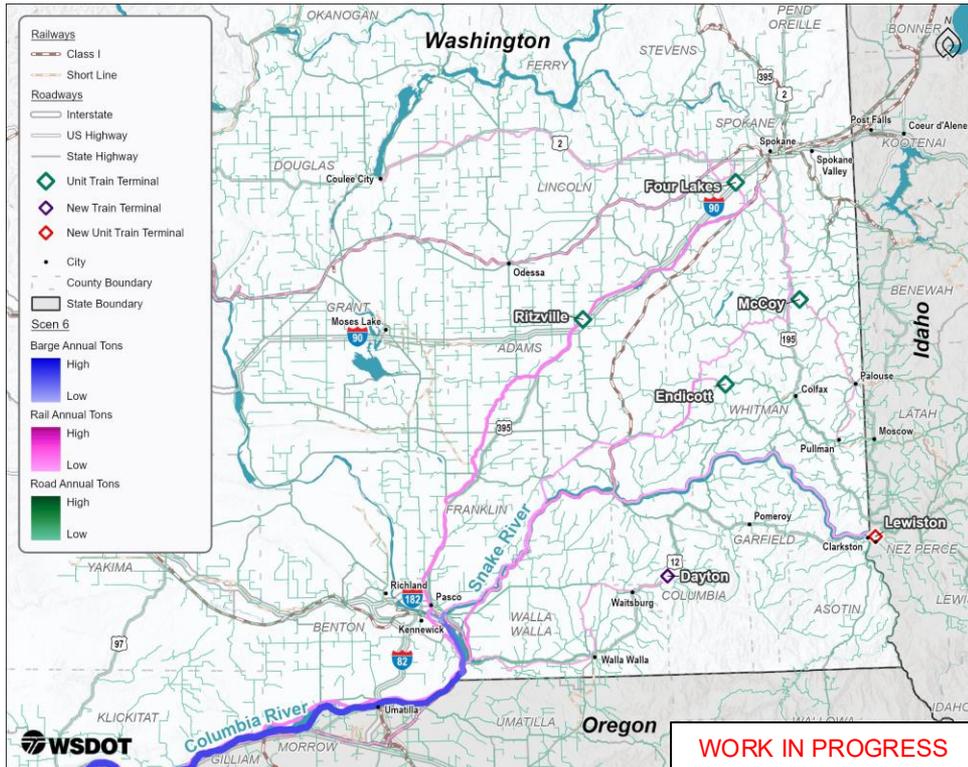
Scenario 6 has increased rail flows along the Lower Snake River, Dayton, CPT, and UP/BNSF mainlines

WORK IN PROGRESS

S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions
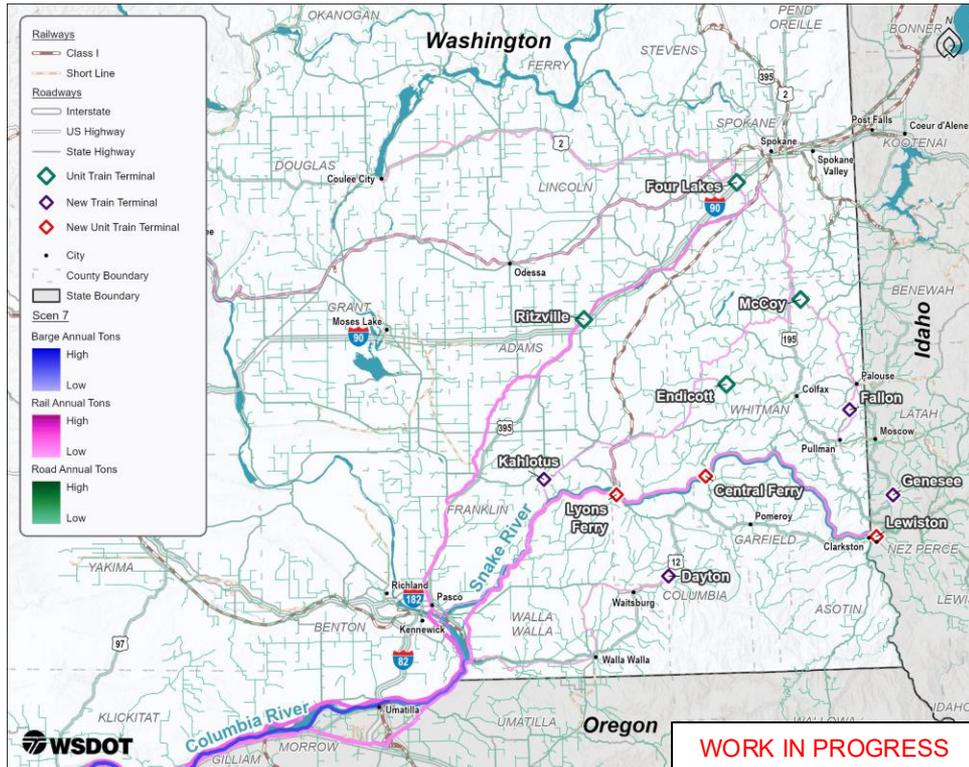
Scenario 7: Annual Tons for Barge, Rail, and Truck

Scenario 7 has increased rail flows along the Lower Snake River, Dayton, CPT, and UP/BNSF mainlines

WORK IN PROGRESS
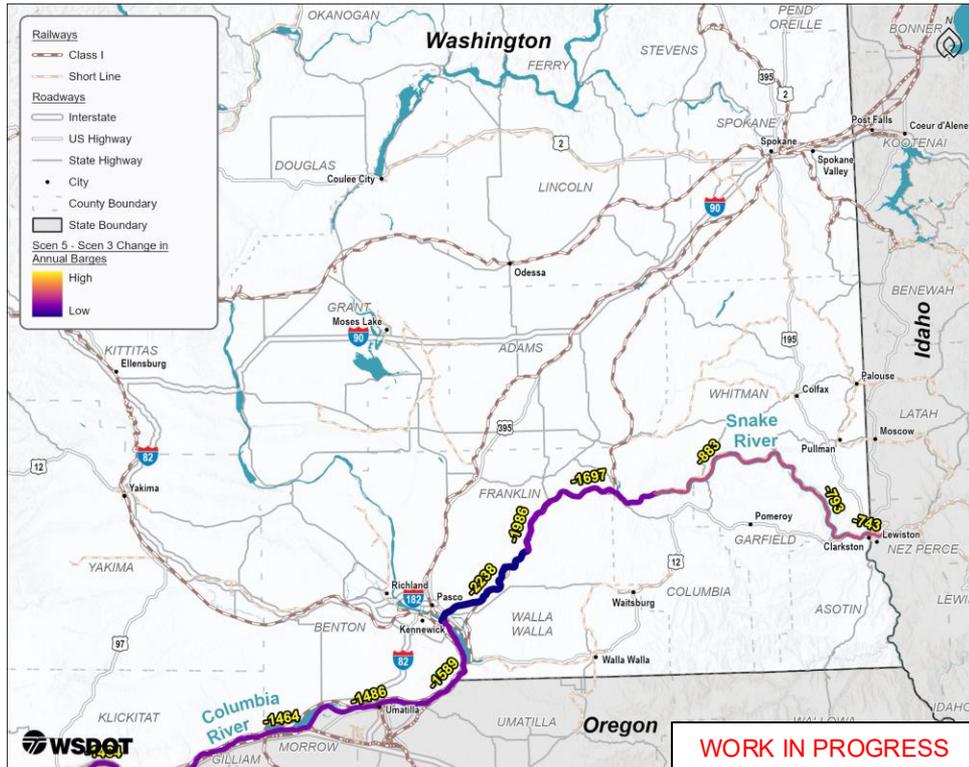
| S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions |

Annual Barge Volumes

Scenario 5: Annual Barges Compared to Scenario 3

This section compares Scenarios 5-7 to Scenario 3

Decreased barge volumes on both the Lower Snake River and the Columbia River

WORK IN PROGRESS

S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions

Decreases in barge volumes due to LSR port closures

Increases in barge activity from shortline rail and downstream truck moves to Tri-Cities
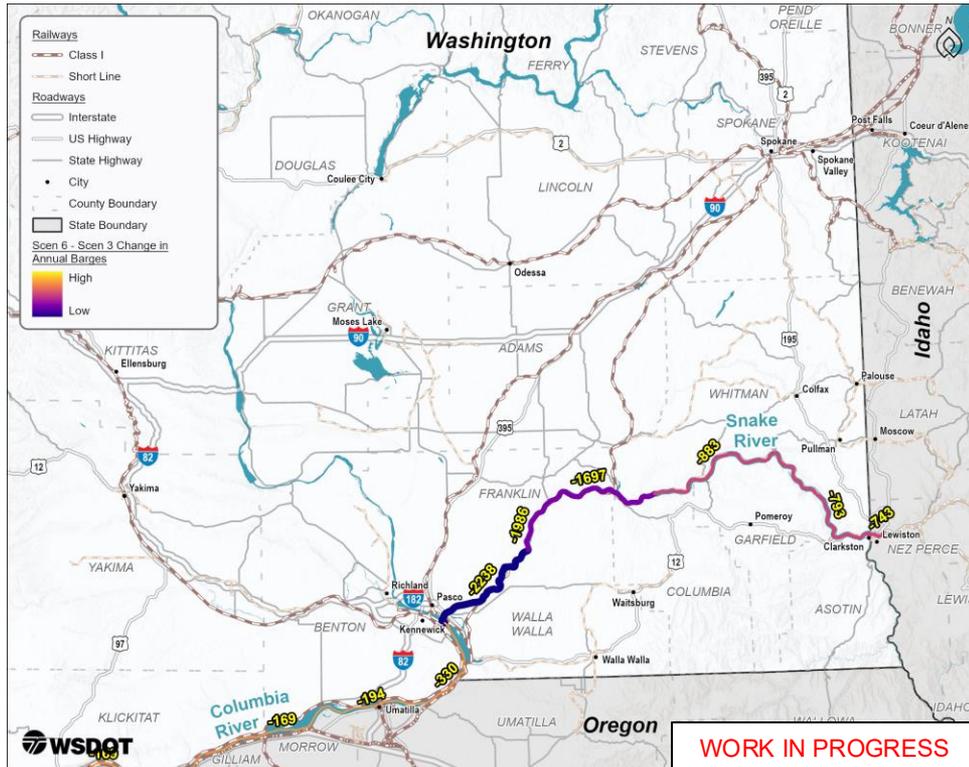
WORK IN PROGRESS

| S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions |

Scenario 7: Annual Barges Compared to Scenario 3

Increases in barge volumes on the Columbia River reflect the impact of shortline rail options

WORK IN PROGRESS

S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions

Annual Train Volumes

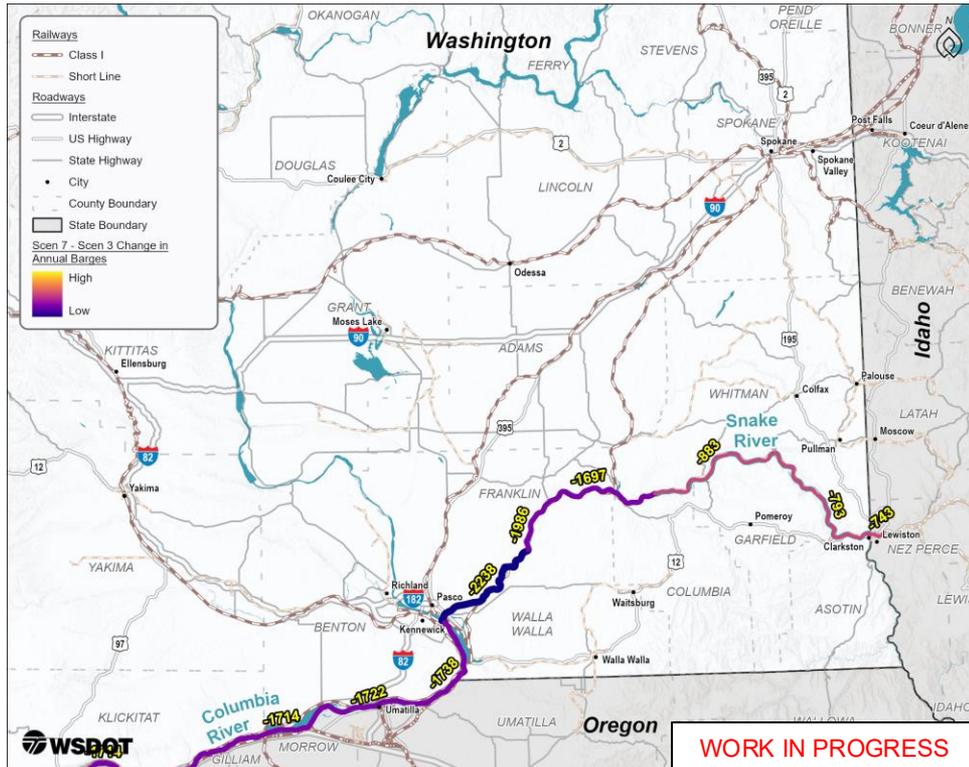# Scenario 5: Change in Annual Trains Compared to Scenario 3

WORK IN PROGRESS

Large train volumes increase alongside the Lower Snake River

- Lower increases on the BNSF/UP mainlines

Lower than expected growth at Endicott rail terminal

- Indicates model capacity needs adjustment

S1 – 2020 with dams | S3 – 2045 with dams | **S5 – New unit train terminals** | S6 – Shortline to Tri-Cities | S7 – Many solutions

Scenario 6: Change in Annual Trains Compared to Scenario 3

WORK IN PROGRESS
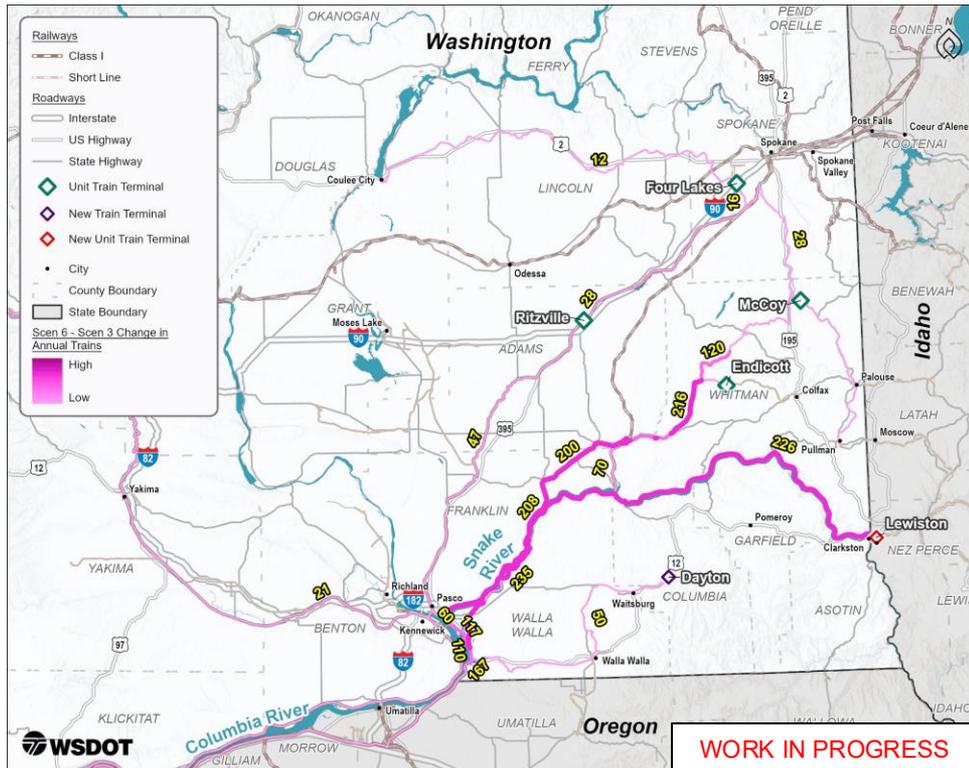
Train volumes increase on shortlines into Tri-Cities

UP/BNSF mainline increases volumes as well
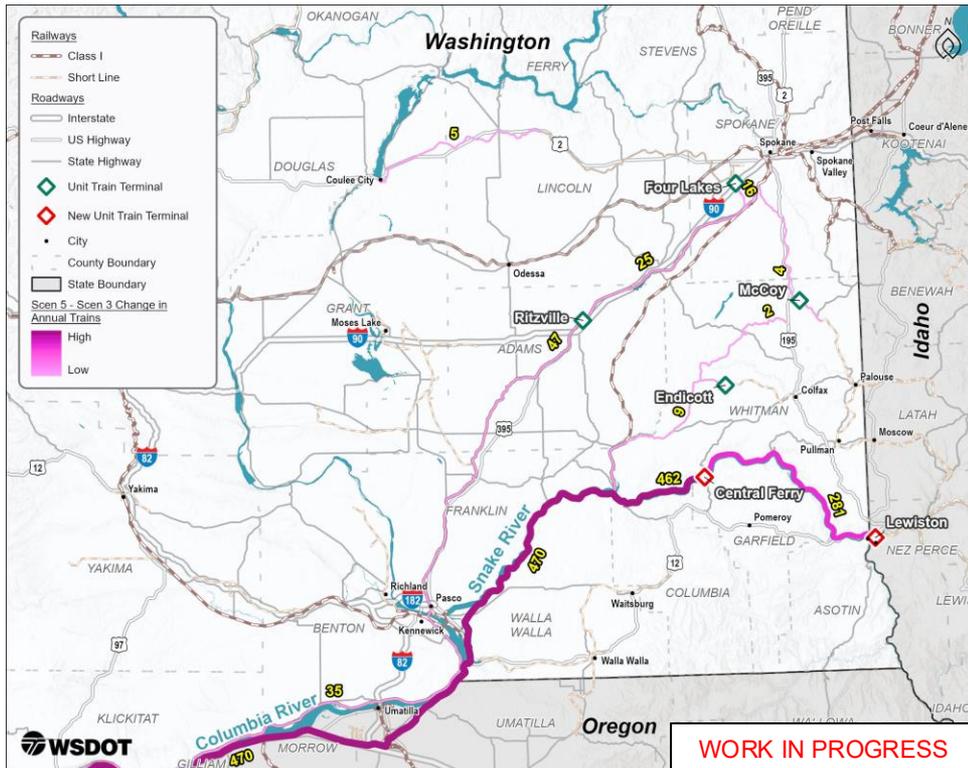
S1 – 2020 with dams → S3 – 2045 with dams → S5 – New unit train terminals → **S6 – Shortline to Tri-Cities** → S7 – Many solutions

WSDOT

Scenario 7: Change in Annual Trains Compared to Scenario 3

Some volumes attracted to each of the solutions

Further analysis can be used to determine the relative effectiveness of each solution

Peak Daily Trucks

Scenario 5: Peak Daily Trucks Compared to Scenario 3

Truck volumes increase to both existing and new rail terminals

Truck volume increases to Endicott rail terminal are lower than expected

- Likely due to the throughput capacity being lower than needed

WORK IN PROGRESS

S1 – 2020 with dams | S3 – 2045 with dams | **S5 – New unit train terminals** | S6 – Shortline to Tri-Cities | S7 – Many solutions

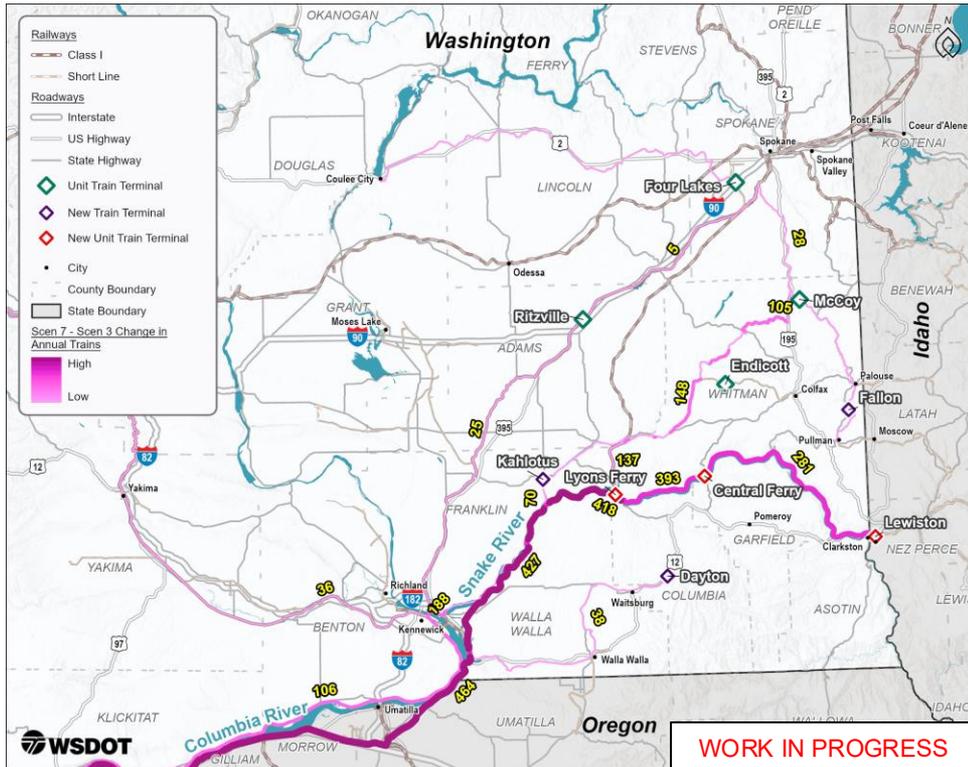# Scenario 6: Peak Daily Trucks Compared to Scenario 3
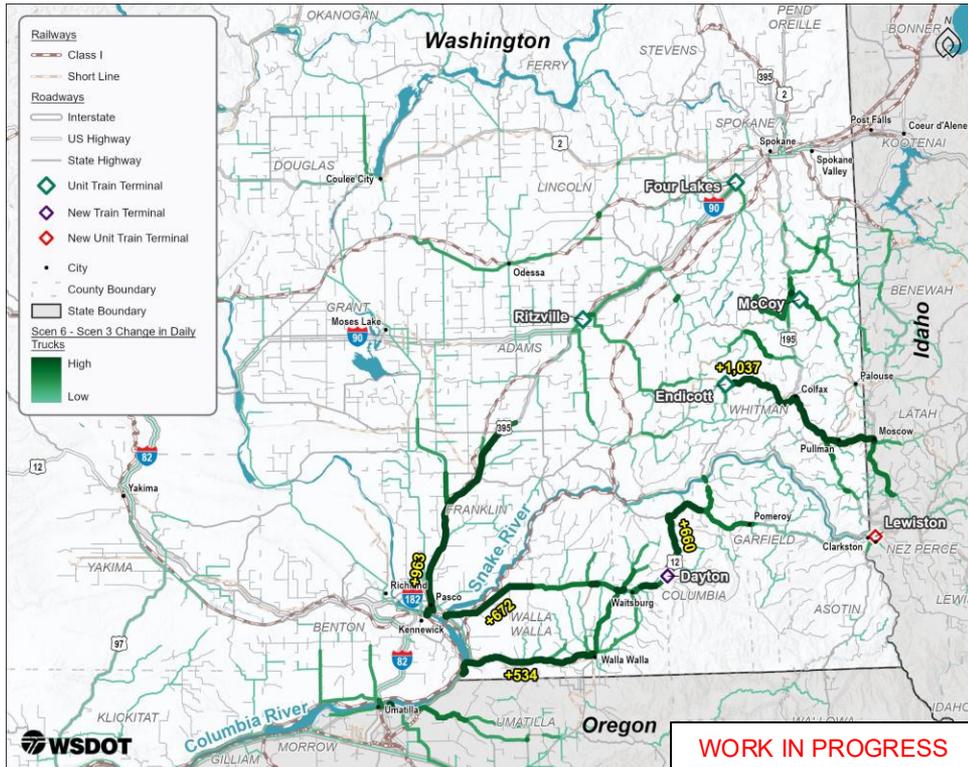
Increase in truck volumes to unit train terminals, shortline terminals, river ports and storage facilities, as expected

WORK IN PROGRESS

S1 – 2020 with dams → S3 – 2045 with dams → S5 – New unit train terminals → S6 – Shortline to Tri-Cities → S7 – Many solutions
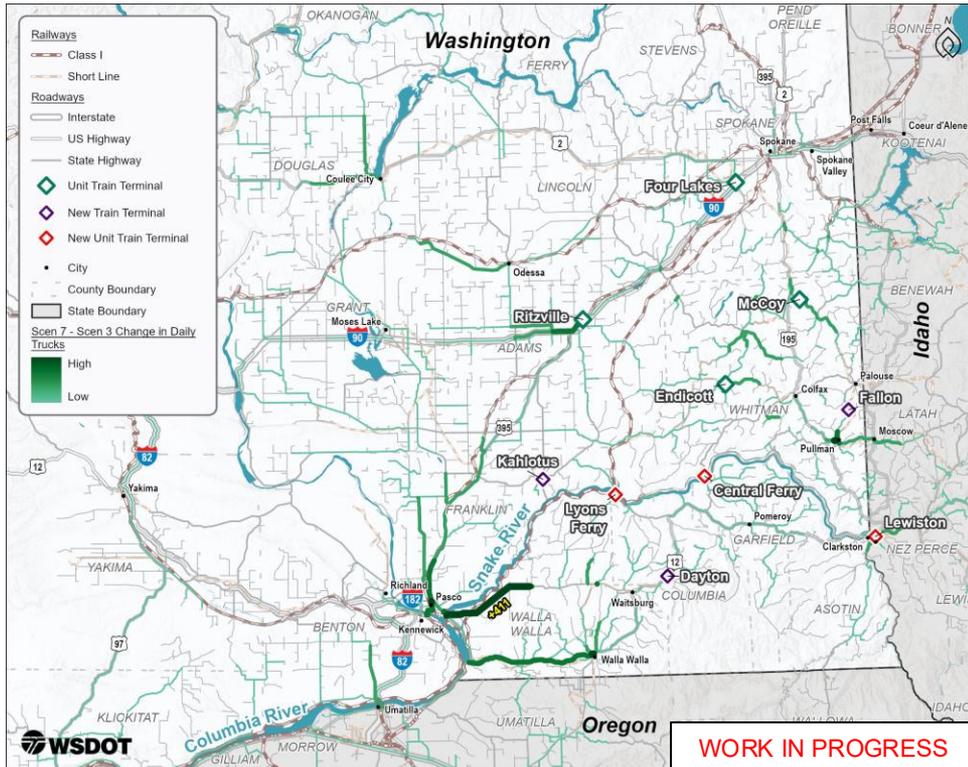
Scenario 7: Peak Daily Trucks Compared to Scenario 3

Least amount of truck impacts of all scenarios

Truck volume increases remain in the Tri-Cities area

WORK IN PROGRESS

S1 – 2020 with dams → S3 – 2045 with dams → S5 – New unit train terminals → S6 – Shortline to Tri-Cities → S7 – Many solutions

Change in Transportation Costs

Scenario 5: Transportation Costs Compared to Scenario 3

WORK IN PROGRESS
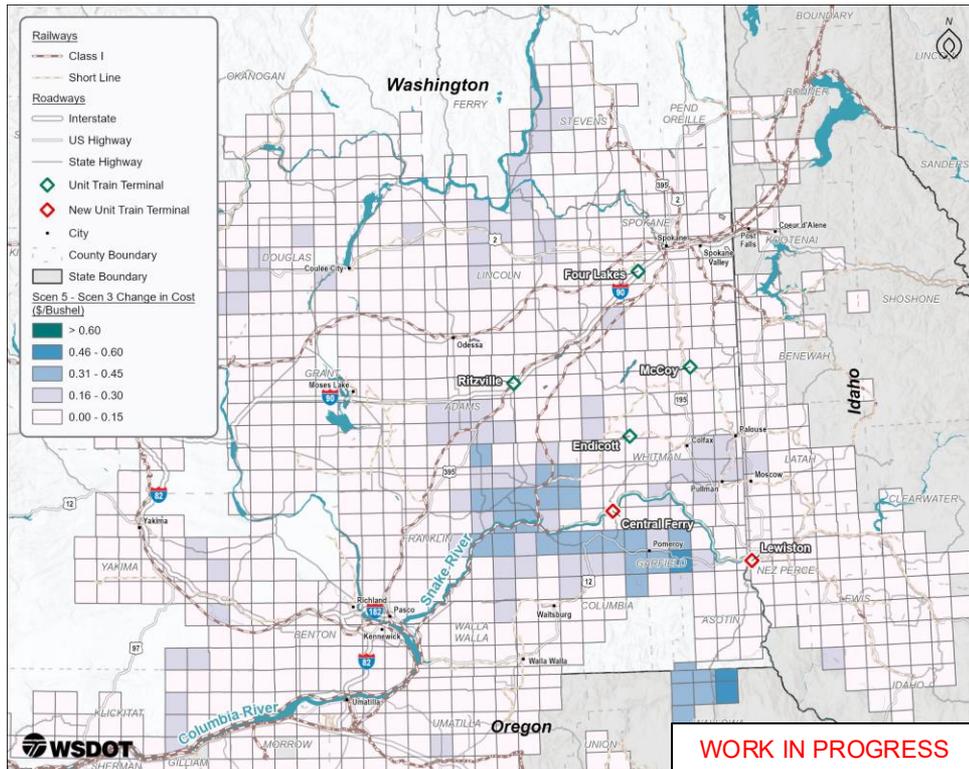
Total transportation costs of $273 million annually

- **Increase of $17 million** compared to Scenario 3

Increased costs for some shippers located close to the LSR due to higher relative rail costs versus barge

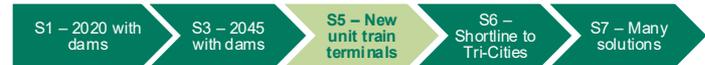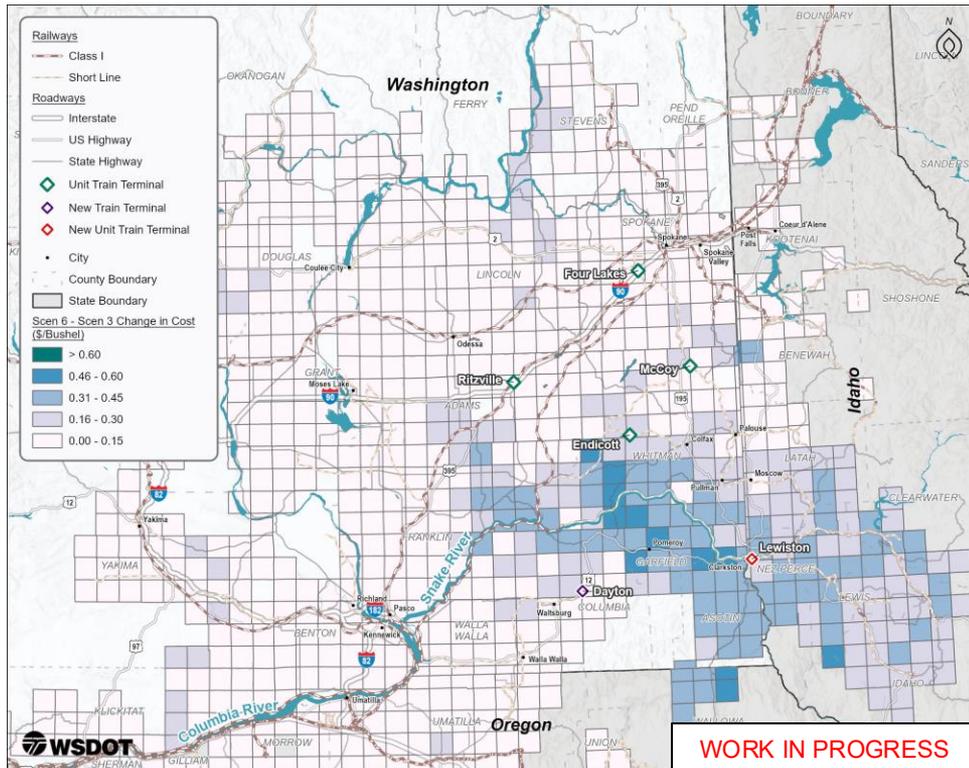| S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions |

Scenario 6: Transportation Costs Compared to Scenario 3

Total transportation costs of $290 million annually

- **Increase of $33 million** compared to Scenario 3
- Higher than Scenario 5

Increased costs are experienced by shippers located along the LSR due to higher relative rail costs, particularly at Lewiston/Wilma and Central Ferry areas

WORK IN PROGRESS

S1 – 2020 with dams → S3 – 2045 with dams → S5 – New unit train terminals → **S6 – Shortline to Tri-Cities** → S7 – Many solutions

Scenario 7: Transportation Costs Compared to Scenario 3

WORK IN PROGRESS
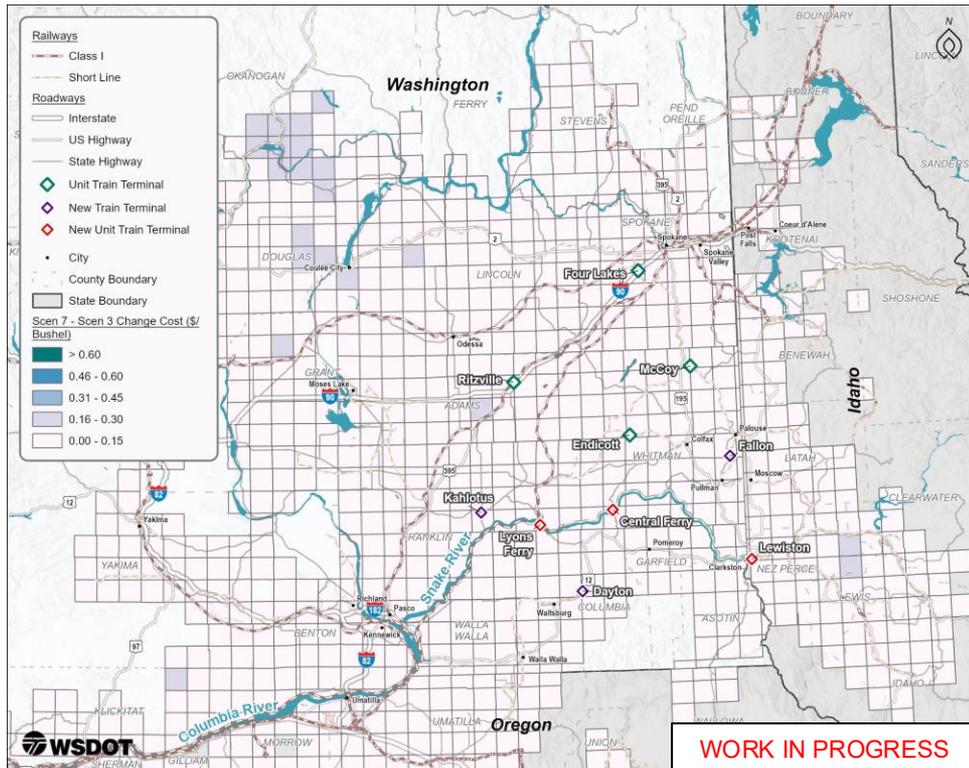
Total transportation costs of $265 million annually

- **Increase of $8 million** compared to Scenario 3
- Lower increases than Scenarios 5 and 6

| S1 – 2020 with dams | S3 – 2045 with dams | S5 – New unit train terminals | S6 – Shortline to Tri-Cities | S7 – Many solutions |

Metrics and Additional Analysis

Key Annual Metrics by Scenario

Metrics	Scenario						
	1 2020 W/ Dams	2 2020 No Dams	3 2045 W/ Dams	4 2045 No Dams	5 New Unit Train Terminals	6 Short Line to Tri-Cities	7 Many Solutions
Truck Ton-Miles	236,555,000	696,880,000	279,725,000	1,064,050,000	339,040,000	340,465,000	261,345,000
Rail Ton-Miles	830,500,000	936,100,000	867,100,000	933,500,000	1,729,950,000	1,264,400,000	1,894,550,000
Barge Ton-Miles	1,392,900,000	947,800,000	1,589,550,000	1,063,300,000	644,600,000	1,139,350,000	554,950,000
Total Ton-Miles	2,459,950,000	2,580,800,000	2,736,400,000	3,060,850,000	2,713,600,000	2,744,200,000	2,710,850,000
Total Transportation Costs	$228,300,000	$286,100,000	$256,800,000	$331,900,000	$273,300,000	$290,100,000	$265,100,000
Truck VMT	18,150,000	53,350,000	21,450,000	81,550,000	26,000,000	26,100,000	20,000,000

Scenario 3: Intersection Level Analysis
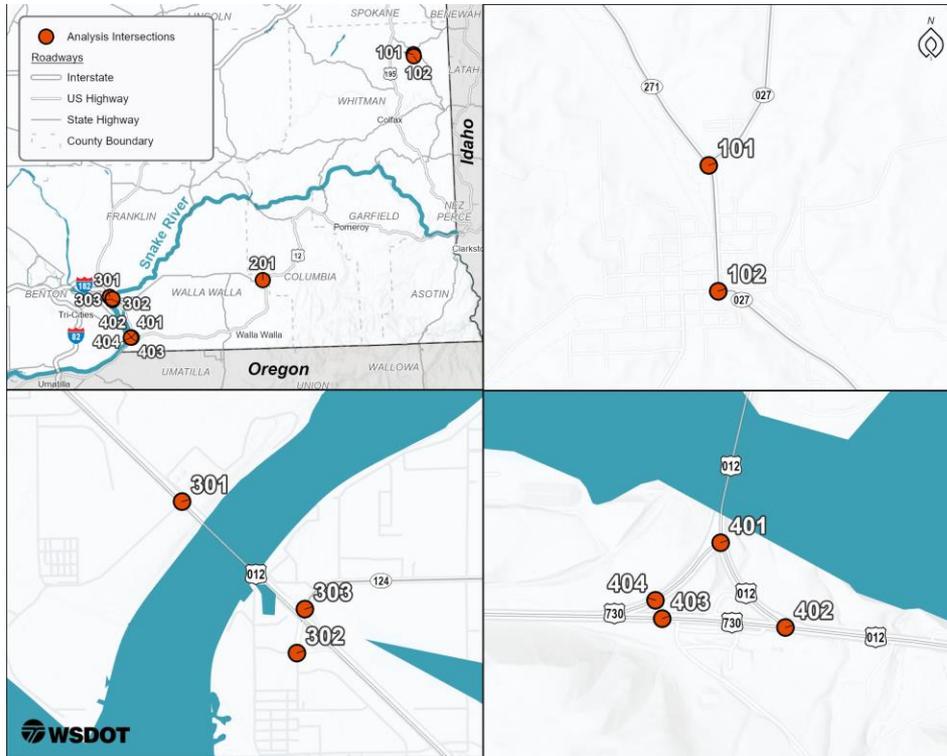
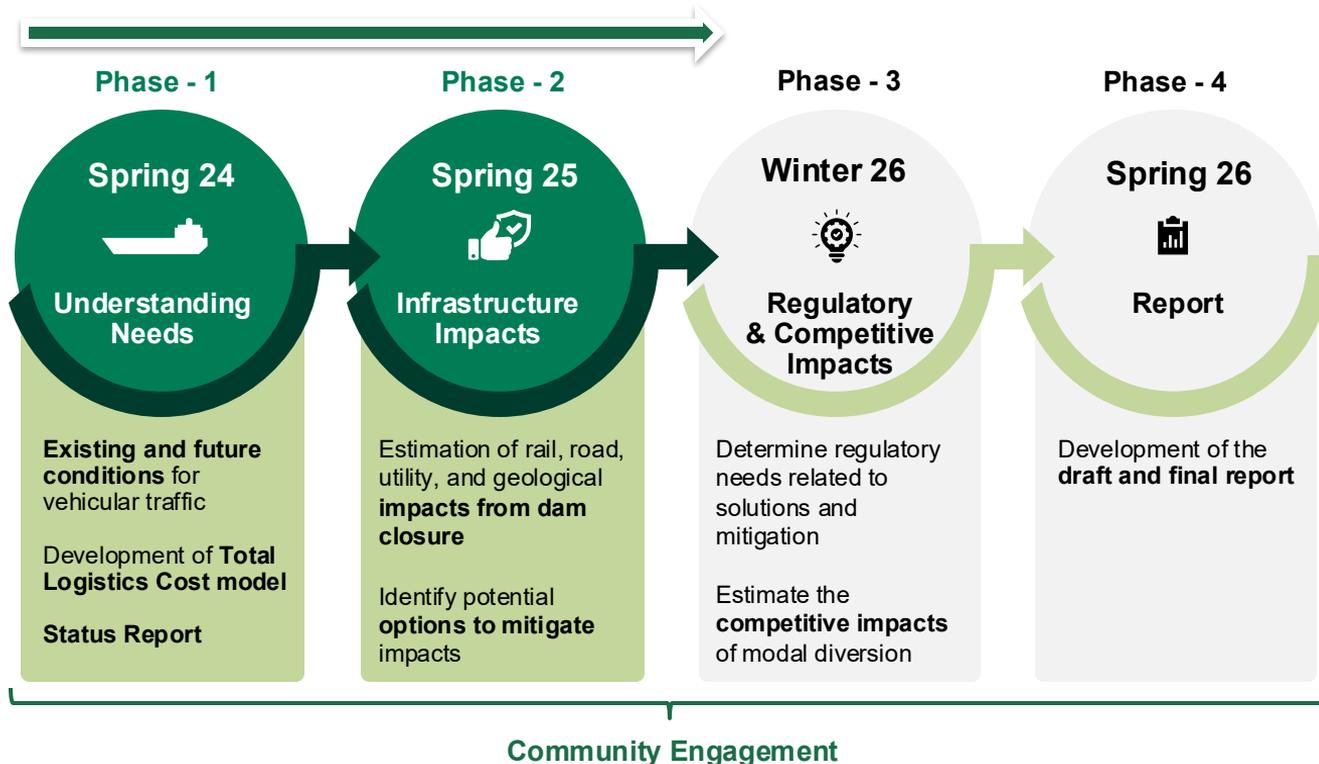| ID	Location	Level of Service (Scen. 1, 2020)	Level of Service (Scen. 3, 2045)
101	SR 271 & SR 27	A	A
102	1st St & Steptoe Ave	A	A
201	US 12 & SR 124	B	C
301	US 12 & Tank Farm Rd/ Sacajawea Park Rd	F	F
302	SR 124 & US 12 EB Ramps/ Gateway Dr	A	A
303	SR 124 & US 12 WB Ramps	A	B
401	US 12 & US 730	C	D*
402	US 12 & 730SP	B	C*
403	Connector & 730SP	B	B*
404	Connector & US 730	A	A*

* Does not consider Phase 8 of US 12

Open Discussion

- Input on Scenario 8 based on what you've seen today

  - Interest in any other new terminals, connections, or services

- Level of detail appropriate for TAC meetings

- Other topics to discuss?

Next Steps

Study Phases: Where we are now

Phase - 1

Spring 24

Understanding Needs

Existing and future conditions for vehicular traffic

Development of **Total Logistics Cost model**

Status Report

Phase - 2

Spring 25

Infrastructure Impacts

Estimation of rail, road, utility, and geological **impacts from dam closure**

Identify potential **options to mitigate** impacts

Phase - 3

Winter 26

Regulatory & Competitive Impacts

Determine regulatory needs related to solutions and mitigation

Estimate the **competitive impacts** of modal diversion

Phase - 4

Spring 26

Report

Development of the **draft and final report**

Community Engagement

WSDOT

Next Steps

- Run further iterations of Scenarios 5-7
- Determine capacity enhancements needed for rail and port modes
- Develop capital costs
- Engagement
    - CAC meeting – December 15
    - Online open house (January 26 – February 9)
- Next TAC meeting – January 28, 2026