

Amtrak Cascades Preliminary Service Development Plan

PSRC Regional Staff Committee

WSDOT Rail, Freight and Ports Division

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Outline of today's topics

- Corridor overview
- Preliminary Service Development Plan background
- Federal context for service planning
- Preliminary Purpose and Need statement
- Service option development process
- Highlights of five preliminary alternatives
- Preliminary capacity improvements list
- Scenario analysis
- Summary of analysis work
- Next steps
- Discussion

Amtrak Cascades overview

Linking Vancouver, BC, Seattle, Portland and Eugene

- 461-mile federally designated Pacific Northwest Rail Corridor (PNWRC)
- Operate on railroad tracks owned by BNSF, Sound Transit, Union Pacific, and Canadian National
- Serves 18 cities, some with long-distance and commuter rail service
- More than 800,000 annual riders prior to the pandemic
- 2023 ridership and revenue nearing 2019 levels

Daily round trips	Current	When restored in fall 2023
Seattle - Portland	4	6
Seattle - Vancouver	2	2
Portland - Eugene	2	2



Why are we doing a Preliminary SDP?

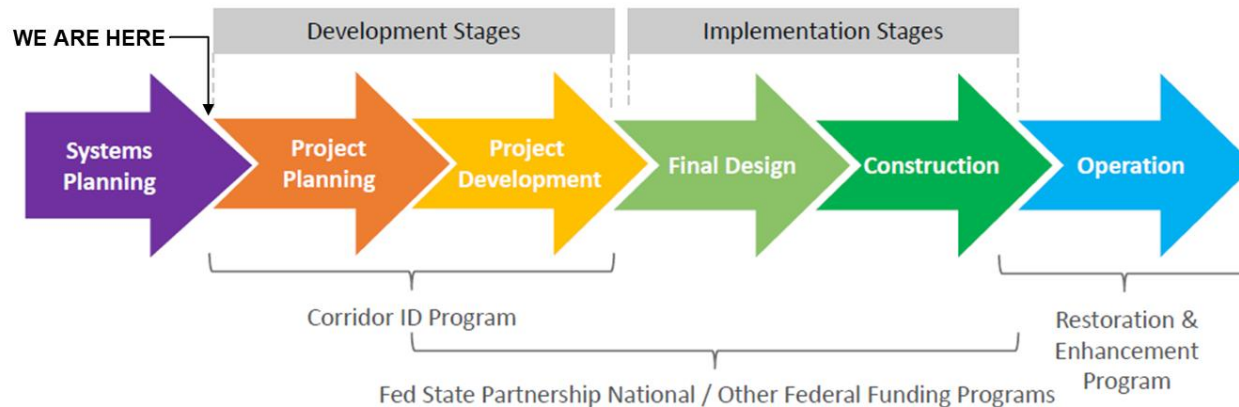


- 2006 Long-Range Plan set the stage for nearly \$800 million in capital improvements funding through federal American Recovery and Reinvestment Act grants
- Current analysis funded by FRA grant to incorporate contemporary rail system conditions, needs, requirements, policies, and procedures
- Examines external factors such as housing and employment relocation, commute or travel preferences, including lifestyle changes resulting from the COVID-19 pandemic
- Provides a head start and positions Amtrak Cascades to take advantage of future federal funding opportunities

FRA: Corridor Identification/Development

- Authorized under IIJA/BIL, established by FRA
- New national framework for comprehensive planning to guide development and creation of pipeline of projects ready for implementation
- Initiates process of developing a comprehensive and full SDP for the entire PNWRC by laying the Systems Planning structural groundwork
- SDPs are statutorily required as part of the Corridor Identification and Development Program – 49 USC 25101(d)
- Submitted federal application that would combine Washington and Oregon work into a single SDP for the entire PNWRC

FRA Project Lifecycle Stages – Corresponding FRA Funding Programs



Listening to public feedback

- WSDOT conducted extensive outreach to obtain feedback from the public, advocacy groups, planning organizations and other stakeholders regarding the Preliminary Purpose & Need statement
- Activities included:
 - Public comment form survey, in four languages, received more than 4,000 responses
 - Informational website and comment form
 - Email notifications to those who subscribed to the Amtrak Cascades distribution list
 - Text message campaign in several languages targeted to limited-English speakers and low-income populations
 - Social media posts in four languages

Top priorities identified through public feedback:

- More frequent service
- Expanded service
- Shorter travel times
- Reliable service
- Better local connections at stations

Feedback Outcome: Preliminary Purpose and Need

The purpose of the proposed Project is to enhance intercity passenger rail service for travelers along the existing route used for the Washington state segment of the PNWRC. The Project would:

- Meet growing intercity travel demand with more frequent, reliable and customer-focused service
- Strengthen multimodal connections to improve accessibility and provide better travel options
- Support greenhouse gas reduction goals
- Support the economic vitality of communities served by PNWRC passenger service
- Address transportation system equity issues along the corridor
- Ensure the rail corridor has the capacity to support needs of all passenger and freight rail service providers

Additionally, the project will:

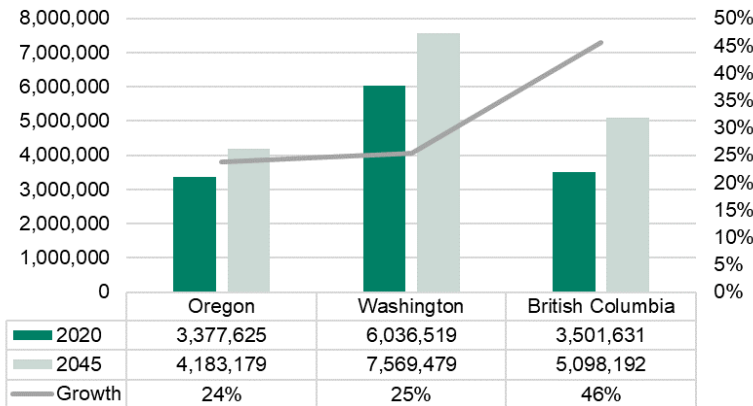
- Avoid or minimize negative community and environmental impacts
- Be a cost-effective investment

Information used to identify options

WSDOT and its consultant team looked at:

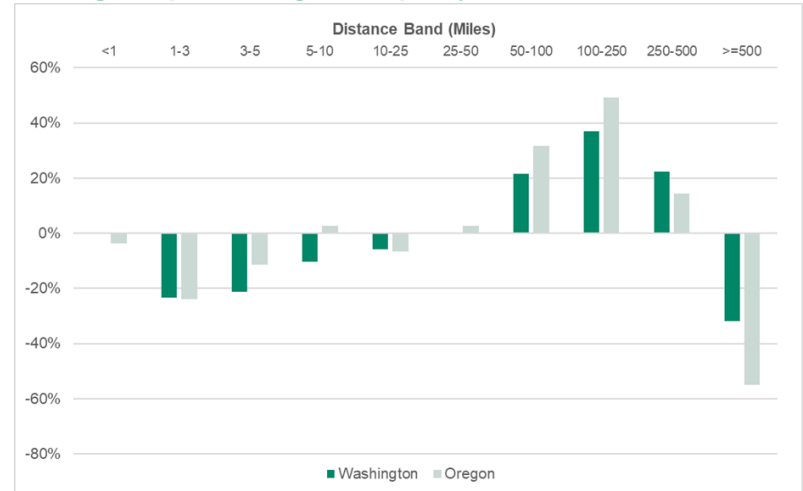
- Current ridership data
- Demographic data for the corridor
- Projected population and employment growth
- Travel patterns in the region, post-pandemic
- Public comments and interviews with employers

Population growth in the PNWRC corridor



Sources: Washington-[Office of Financial Management](#); Oregon-[Bureau of Economic Analysis](#) (for the current year), [Portland State University](#) (for 2045 / other counties along the rail corridor in Oregon not including Portland MSA), [The Metro Council](#) (for 2045 / Portland MSA only); British Columbia-[Statistics Canada](#) (current year), [BCStats](#) (for 2045)

Change in percentage of trips by distance, 2019 to 2022



20-50% increase in short and mid-distance trips between 2019 and 2022

Source: <https://data.bts.gov/Research-and-Statistics/Trips-by-Distance/w96p-f2qv/data>

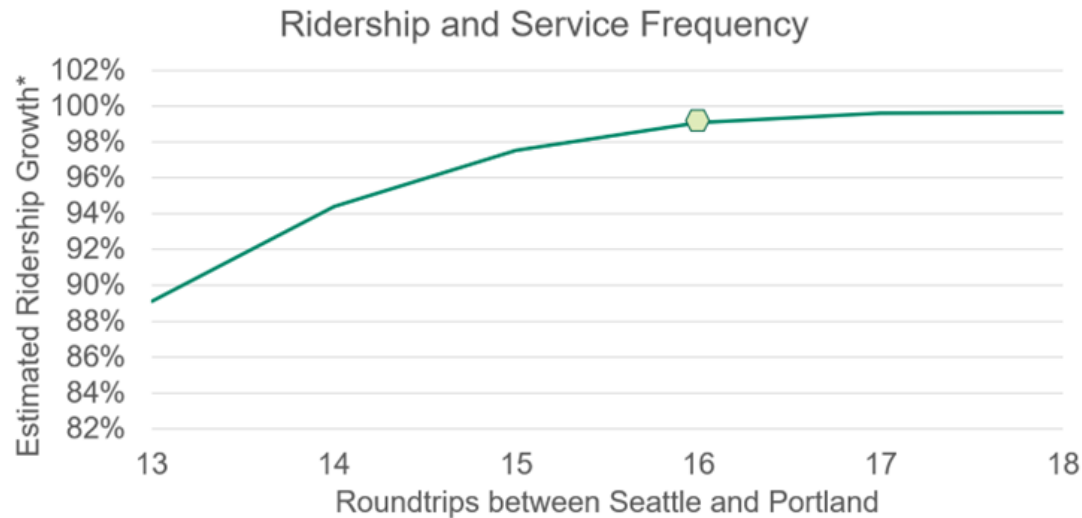
Service option evaluation and screening

- Consulted with Amtrak Cascades service partners (FRA, BNSF, Sound Transit, CN, Amtrak, Oregon DOT) regularly to guide the technical analysis
- Developed an initial list of 13 service options, a wide range of low, medium, and high service frequency
- Used ridership projections, feasibility, multi-modal connectivity, equity and travel time improvements to evaluate and screen options
- Selected five highest-scoring options to advance as preliminary alternatives
- Conducted further operational, infrastructure, and detailed ridership, and scenario analysis on five preliminary alternatives



Service option characteristics

- Service frequency**
 - **Lower service frequency options**
(minimum of 8 daily round trips for Seattle-Portland, 3 for Seattle – Vancouver BC)
 - **Higher service frequency options**
(up to 16 daily round trips for Seattle-Portland)
- Stopping patterns**
 - **Express** (*non-stop*)
 - **Limited** (*stops in Tacoma and Vancouver, WA*)
 - **Partial rail service for new Seattle–Vancouver, BC trips**
(*rail for Seattle–Bellingham, bus for Bellingham–Vancouver*)
- Speed increases**
 - **Increasing maximum speed** (from 79 mph to 90 mph in straight sections)



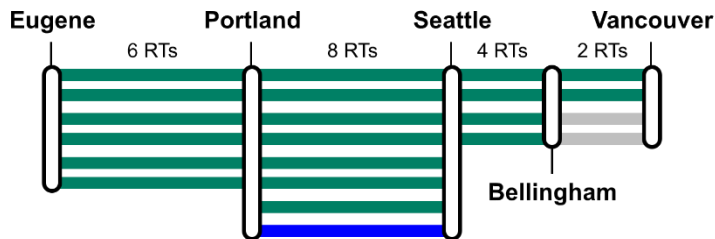
*Ridership growth based on six rail roundtrips for the northern corridor segment

Preliminary Alternative A

All preliminary alternatives are subject to further analysis and refinement

Schedule

	Travel Time	Roundtrips
Vancouver–Seattle		4
Local	3h 46m	2
Express	—	—
Local + Thruway bus	4h 07m	2
Seattle–Portland		8
Local	3h 11m	7
Limited	—	—
Express	2h 51m	1



Highlights

- Projected ridership 54% over baseline
- Highest speeds of 79 mph
- Minimum of 6 more trainsets needed
- Infrastructure improvements
 - North of Seattle – low level
 - South of Seattle – medium level
- Travel time reduction via service patterns
- Potential building block service option

Travel times are preliminary estimates

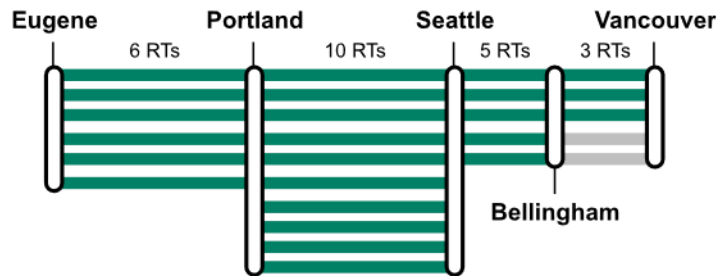
All options include six roundtrips between Eugene and Portland, as identified in ODOT's Service Development Plan

Preliminary Alternative B

All preliminary alternatives are subject to further analysis and refinement

Schedule

	Travel Time	Roundtrips
Vancouver–Seattle		5
■ Local	3h 46m	3
■ Express	—	—
■ Local + ■ Thruway bus	4h 07m	2
Seattle–Portland		10
■ Local	3h 11m	10
■ Limited	—	—
■ Express	—	—



Travel times are preliminary estimates

All options include six roundtrips between Eugene and Portland, as identified in ODOT's Service Development Plan

Highlights

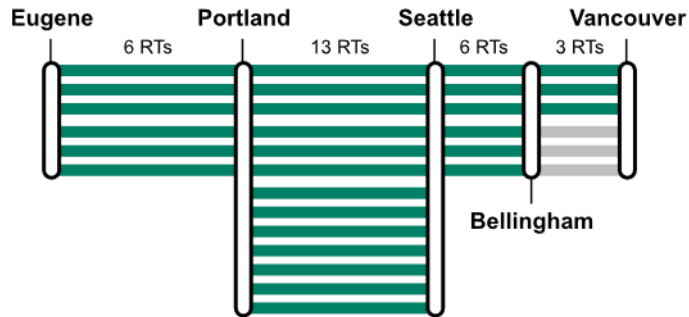
- Projected preliminary ridership 78% over baseline
- Highest speeds of 79 mph
- Minimum of 6 more trainsets needed
- Infrastructure improvements
 - North of Seattle – low level
 - South of Seattle – medium level
- Potential building block service option

Preliminary Alternative C

All preliminary alternatives are subject to further analysis and refinement

Schedule

	Travel Time	Roundtrips
Vancouver–Seattle		6
Local	3h 39m	3
Express	—	—
Local + Thruway bus	4h 00m	3
Seattle–Portland		13
Local	3h 05m	13
Limited	—	—
Express	—	—



Travel times are preliminary estimates

All options include six roundtrips between Eugene and Portland, as identified in ODOT's Service Development Plan

Highlights

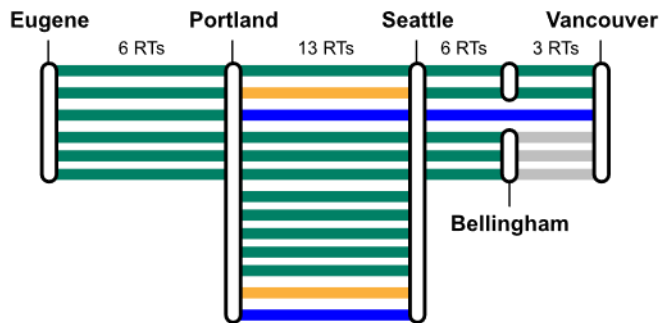
- Projected preliminary ridership 112% over baseline
- Highest speeds of 90 mph
- Minimum of 9 more trainsets needed
- Infrastructure improvements
 - North of Seattle – low/medium level
 - South of Seattle – high level
- Second highest ridership performance
- Travel time reduction via track improvements

Preliminary Alternative D

All preliminary alternatives are subject to further analysis and refinement

Schedule

	Travel Time	Roundtrips
Vancouver–Seattle		6
Local	3h 46m	2
Express	3h 33m	1
Local + Thruway bus	4h 07m	3
Seattle–Portland		13
Local	3h 11m	9
Limited	2h 57m	2
Express	2h 51m	2



Travel times are preliminary estimates

All options include six roundtrips between Eugene and Portland, as identified in ODOT's Service Development Plan

Highlights

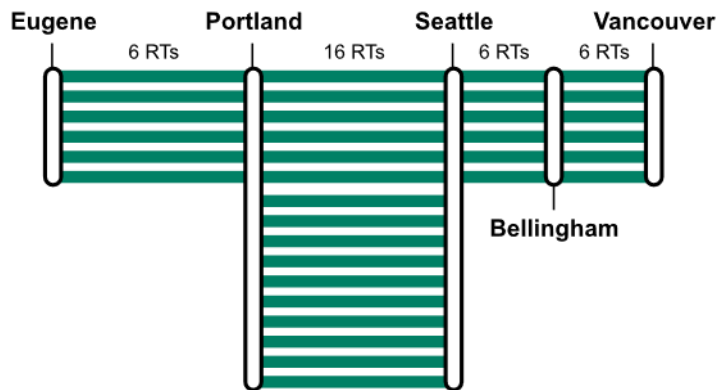
- Projected preliminary ridership 89% over baseline
- Highest speeds of 79 mph
- Minimum of 11 more trainsets needed
- Infrastructure improvements
 - North of Seattle – low level
 - South of Seattle – medium/high level
- Travel time reduction via service patterns
- Express and limited trains serve major markets in both directions in morning and evening
- Potential for phased travel time reductions

Preliminary Alternative E

All preliminary alternatives are subject to further analysis and refinement

Schedule

	Travel Time	Roundtrips
Vancouver–Seattle		6
Local	3h 39m	6
Express	—	—
Local + Thruway bus	—	—
Seattle–Portland		16
Local	3h 05m	16
Limited	—	—
Express	—	—



Highlights

- Projected preliminary ridership 140% over baseline
- Highest speeds of 90 mph
- Minimum of 9 more trainsets needed
- Infrastructure improvements
 - North of Seattle – low/medium level
 - South of Seattle –high level
- Highest overall ridership growth

Travel times are preliminary estimates

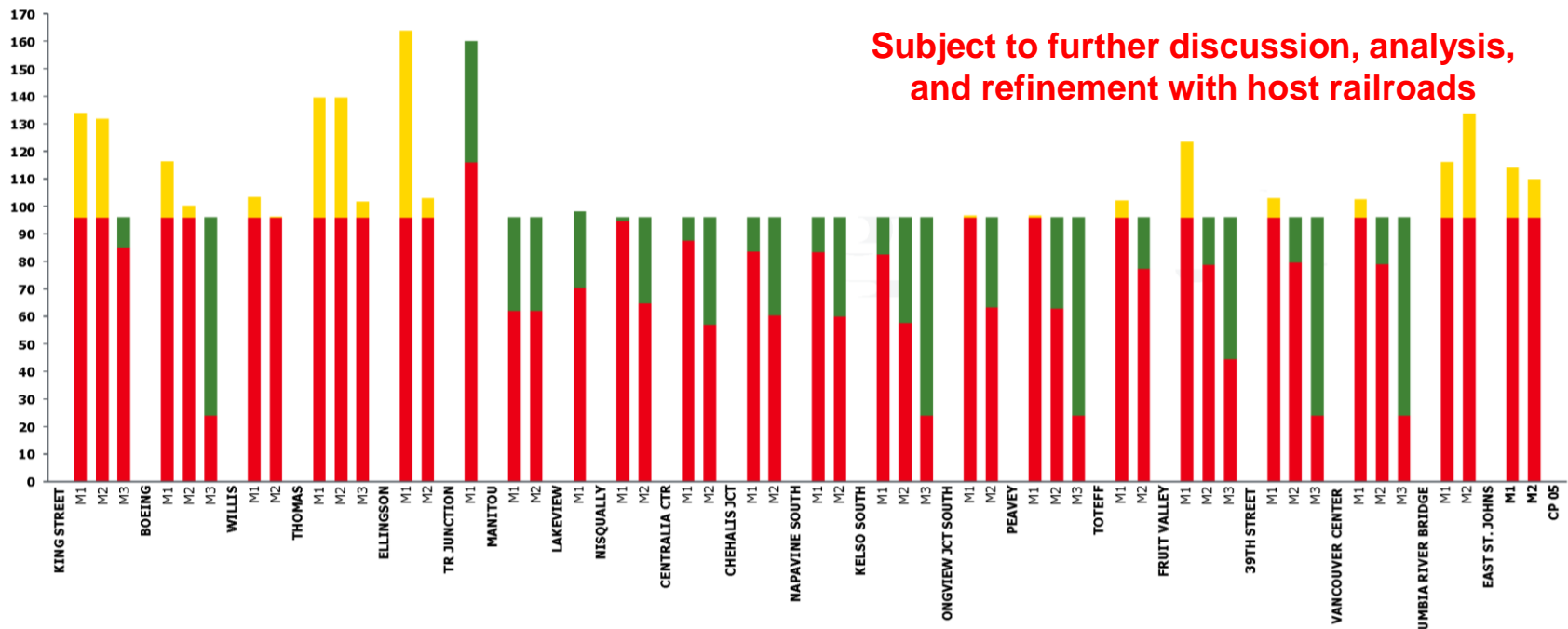
All options include six roundtrips between Eugene and Portland, as identified in ODOT's Service Development Plan

Identifying most congested points on the system

WSDOT worked with service partners to examine current and future capacity on the route, identify areas expected to be over-capacity, and develop preliminary infrastructure needs to support each of the identified service options. [add caveats]

2045 capacity south of Seattle with Service Option E

Over Capacity Unallocated Capacity Consumed Capacity



Identifying preliminary capital improvements for analysis

As part of this Preliminary SDP:

- Infrastructure improvements are a preliminary assessment of what could be needed to achieve each preliminary alternative
- No engineering has been performed to design capital improvements
- No cost estimates are available without further analysis and design
- Further analysis and discussions with host railroads and other service partners are needed
- Identified infrastructure improvements do not constitute funding availability or authorization from service partners.

Preliminary capacity improvements

Subject to further discussion, analysis, and refinement with host railroads

	Improvement type	Location	Preliminary Alternatives				
			A	B	C	D	E
North of Seattle*	Controlled siding (0.5 miles)	White Rock, BC	✓	✓	✓	✓	✓
	Expand yard facilities	Everett (Delta Yard)	✓	✓	✓	✓	✓
South of Seattle	Controlled siding (3.3 miles)	Seattle (Georgetown/Boeing Field)	✓	✓	✓	✓	✓
	Expand yard facilities	Auburn Yard	✓	✓	✓	✓	✓
	Controlled siding (1.7 miles)	Puyallup	✓	✓	✓	✓	✓
	Extend triple track (4.2 miles)	Puyallup–Tacoma	✓	✓	✓	✓	✓
	Controlled siding (2.2 miles)	Tacoma	✓	✓	✓	✓	✓
	Controlled siding (0.2 miles)	Dupont	✓	✓	✓	✓	✓
	Reconfigure junction	Portland, OR (North Portland Junction)	✓	✓	✓	✓	✓
	Extend triple track (2.8 miles)	Kent–Auburn			✓	✓	✓
	Extend triple track (1.9 miles)	Portland, OR (<u>Willbridge Yard</u>)					✓

* Does not include any necessary improvements in Canada between the Fraser River Bridge and Pacific Central Station in Vancouver, BC

Supplemental: scenario analysis

- Supplemental “what-if” analysis to gain insight into how future uncertainties in the travel market, transportation policies, and investments may influence ridership projections
- Results not used to change the preliminary alternatives

Major factors considered

External trends

- *Post-pandemic travel behavior changes*
- *Emerging technologies*
- *Land use changes*

Policy initiatives

- *Vehicle miles traveled (VMT) pricing*
- *Parking restrictions*

Supporting service enhancements

- *Additional transit service*
- *Station accessibility*

Future investment

- *Current air travel forecasts*

Supplemental: scenario findings

Two plausible scenarios as bookends to represent extremes

Four additional scenarios addressing the major factors

Scenario 1: Higher demographic growth and improved rail and transit services

Scenario 2: Lower demographic growth and improved highway travel conditions

Scenario 3: Urban growth shifts to suburban and rural areas and telework trend continues

Scenario 4: Potential improvements to enhance rail service (station accessibility, reliability, amenities)

Scenario 5: Possible improvements to enhance transit service

Scenario 6: Air travel increases as forecasted in the corridor

Future uncertainties could result in a range of a 39% decrease to a 43% increase in Amtrak Cascades ridership forecasts

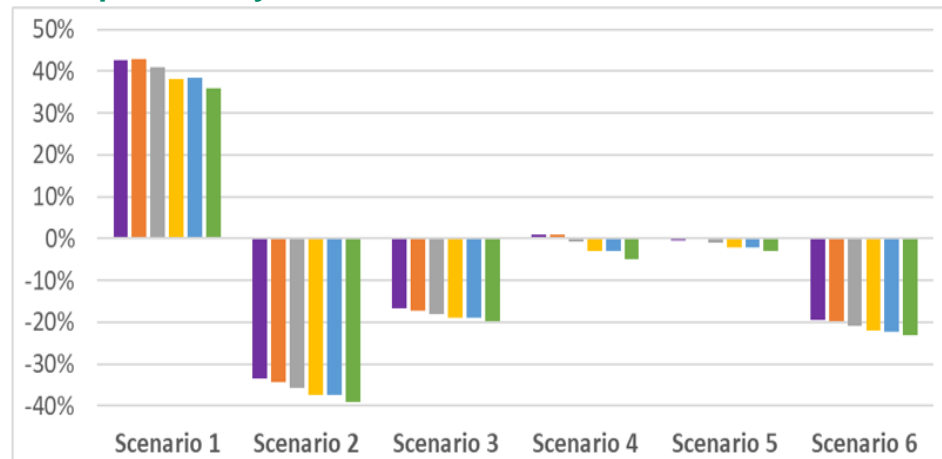
Key factors increasing ridership growth:

- Higher population and employment growth
- Supportive rail enhancements
- Transit service improvements

Key factors limiting ridership growth:

- Less business travel
- Continued high rates of teleworking
- Technology trends such as vehicle automation

Impact of scenarios on ridership forecasts for the five preliminary alternatives



Ridership analysis summary

Key points – service characteristics and ridership

Up to 16 Seattle-Portland roundtrips viable from demand perspective	<p>Further discussion and analysis with host railroads and other service partners required</p> <p>Capital investments and operating expenses need to be understood</p>
13-minute runtime saving from higher maximum speed limit (90 mph) results in 6-7% increase in total ridership	<p>Feasibility of increasing maximum speed needs to be confirmed – time savings is a ‘best-case’ outcome</p> <p>Other options for reducing travel time need to be studied</p>
Skipping intermediate stops may negatively affect total ridership	May improve revenue performance with higher fares – needs to be further explored
Seattle-Bellingham rail service with a bus connection to Vancouver BC (Alternative D) results in less than 5% drop in ridership compared to full rail service option	Seattle-Bellingham trips could be a useful option if additional rail service to Vancouver, BC is not feasible in the near term – additional validation needed

Key points – travel trends and ridership

Trends with a positive influence on ridership:	<ul style="list-style-type: none"> • Higher population and employment growth • Supportive rail enhancements • Transit service improvements
Trends with a negative influence on ridership:	<ul style="list-style-type: none"> • Less business travel • Continued high rates of teleworking • Technology trends (e.g. vehicle automation)

Next steps

Preliminary Service Development Plan

- Prepare final report
- Public comment on final report

FRA Corridor ID Program process *(if accepted into the program)*

- Step 1: Scoping
- Step 2: Service Development Plan (full corridor, including Oregon)
- Step 3: Preliminary engineering / NEPA

For more information about the FRA Corridor ID Program visit:

<https://railroads.dot.gov/corridor-ID-program>

Information

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