



Assessment of Rail Safety Governance in Washington State

December 2020 Presentation to the Washington State
Legislature Joint Transportation Committee

December 17, 2020

The CPCS Team – who is here today:



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- Our team was also supported by specific task leads and senior advisors with expertise in rail safety governance and operations





Presentation map

Background | objectives | methodology

Roles in safety governance

Findings | recommendations

Conclusion | next steps | discussions



The 2017 Amtrak Cascades passenger train derailment outside of DuPont, Washington elevated the need to examine rail safety practices and governance in Washington

NTSB report findings identified an opportunity to further define oversight agency roles and responsibilities, including coordination efforts



Objective:

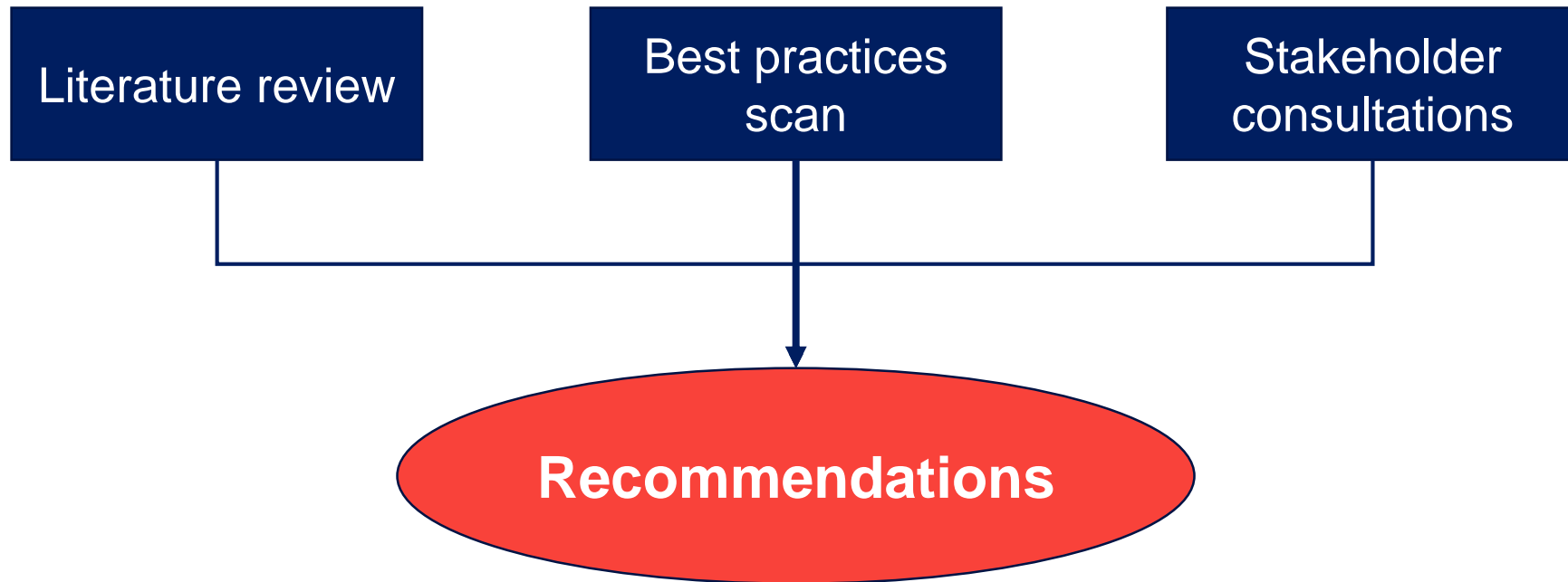
To provide recommendations to the legislature on improving rail safety governance in Washington state, by class of rail (intercity, commuter, freight and transit) where applicable.



Study key questions

- **KQ1:** What are the roles of federal, state, regional, and local agencies in the State of Washington for rail safety oversight and governance? What other stakeholder agencies, related to rail safety, exist in Washington State?
- **KQ2:** What can be learned from rail safety governance practices in other states and countries?
- **KQ3:** What are the gaps and inconsistencies in the state statutory law and administrative rules germane to rail safety oversight?
- **KQ4:** How can Washington's rail safety governance be improved?

Recommendations were informed by a literature review, best practices (jurisdictional) scan and stakeholder consultations



Limitation: study considers applicable legislation/regulation, but is not a legal opinion on any topic.

We spoke with operators, regulators and other stakeholders with interest in rail safety

- We gathered views on the following topics:
 - Understanding of rail safety governance in Washington state, including coordination
 - Views on what is working well, not well and other gaps
 - Recommendations that stakeholders have to improve rail safety governance
- The Federal Railroad Administration was invited to participate, but declined

Stakeholders consulted

Amtrak

Association of Washington Cities

BNSF Railway

Brotherhood of Locomotive Engineers and Trainmen - Washington State Legislative Board, IBT-Rail Conference

Central Puget Sound Regional Transit Authority (Sound Transit)

City of Kent

City of Lakewood

National Transportation Safety Board

Portland-Vancouver Junction Railroad

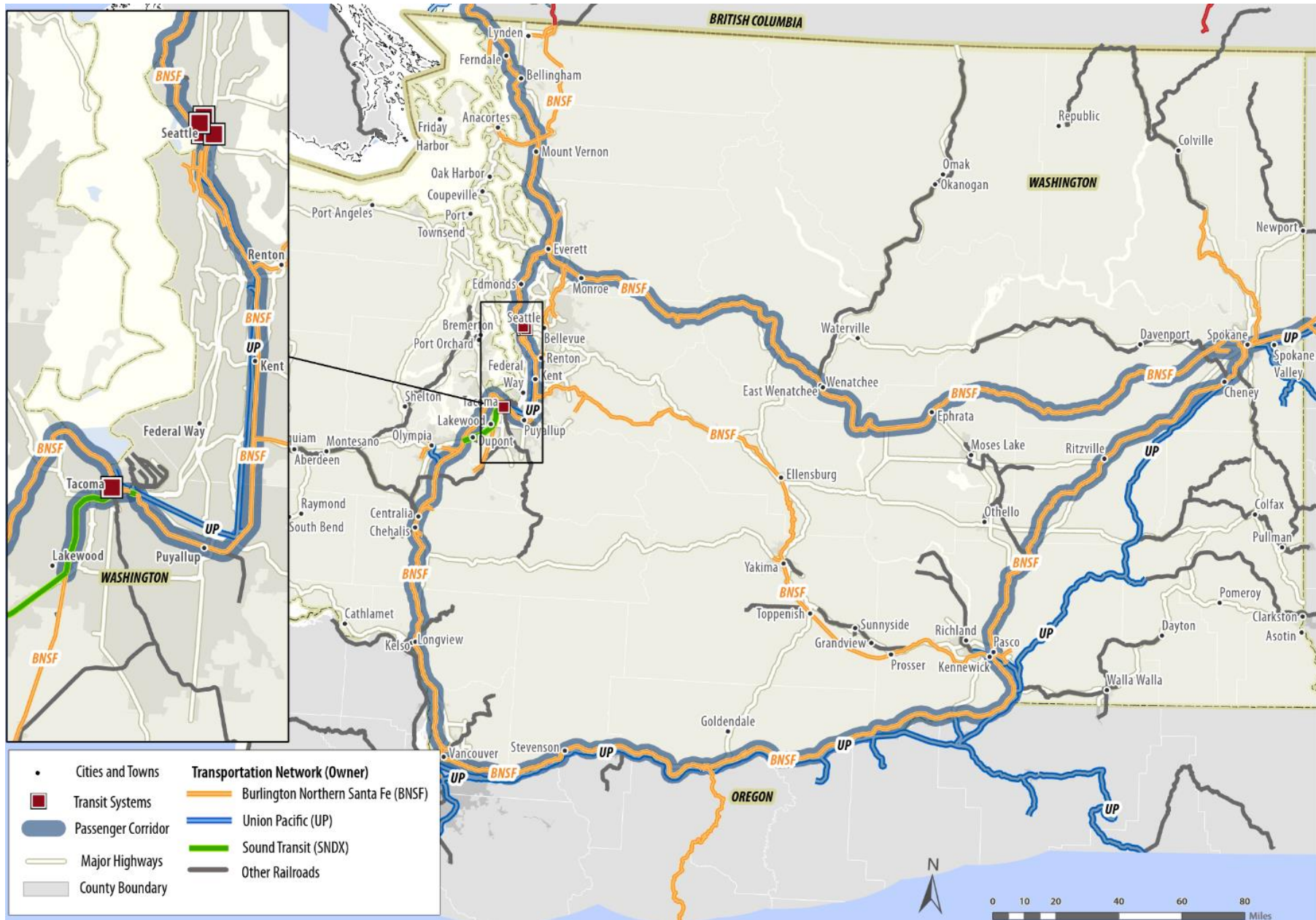
Transportation Division, Sheet Metal, Air, Rail, & Transportation Union

Washington State Department of Transportation, Rail, Freight, and Ports Division

Washington State Department of Transportation, State Safety Oversight Agency

Washington Utilities & Transportation Commission

The rail system in Washington includes over 3,000 miles of track supporting passenger, commuter, freight, and transit operations



Source: CPCS based on Oakridge National Labs rail network, and other data.

Railroads (intercity passenger, freight, and commuter) and *transit* (including light rail, streetcars, and monorails) each have different regulatory frameworks:

Examples of *railroads* (passenger)



Examples of *transit* systems



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- ItsDaDoc / Wikipedia / [CC BY-SA 4.0](#)
- Atomic Taco / Wikipedia / [CC BY-SA 2.0](#)

Railroads (intercity passenger, freight, and commuter) and transit (including light rail, streetcars, and monorails) each have different regulatory frameworks:

Railroads

Transit

Primary federal regulator

Federal Railroad Administration (FRA)

Federal Transit Administration (FTA)

Primary state-level regulator

Washington Utilities and Transportation Commission (WUTC)

Washington Department of Transportation, State Safety Oversight Agency (WSDOT SSOA)

Federal-state relationship

Under the State Safety Participation Program (SSPP), states cooperate with the FRA's oversight program typically in supporting routine inspections.

The FTA delegates most day-to-day safety oversight activities to the SSOA. The FTA has oversight authority, however, including the ability to withhold FTA funding.

The Washington Department of Transportation (WSDOT) provides capital and operating funding for rail services. WSDOT is **neither** an operator nor a regulator of railroad safety.



Federal law pertaining to *railroads* generally pre-empts state regulations.

Railroads

- Federal railroad law requires **nationally-uniform** railroad laws, regulations, and orders “to the extent practicable.”
- 49 U.S. Code § 20106(a)(2) sets out when a state can adopt or in force laws related to railroad safety and security

Transit

- Federal transit requirements are **less prescriptive** and do not generally require uniformity of technical standards



In Washington State, there are a number of *strengths* of the existing rail safety oversight model:

- Railroad accident metrics have trended at or below national-averages over the past 10 years
- Separation of regulatory (WUTC) and funding (WSDOT) is an effective practice, avoiding a conflict between mandates, i.e. rail safety oversight and service delivery
- WUTC rail inspector staffing is appropriate given benchmarks from other states, and has developed additional communication protocols with complementary agencies in recent years

We recommend maintaining the existing regulatory model in Washington State.

However, there are *three* key areas where the legislature could consider strengthening rail safety governance in Washington State:

Opportunity for improvement

I. Strengthening the role of the WUTC in overseeing system safety of operators across the project lifecycle, including the commissioning of new infrastructure, in cooperation with the FRA.

II. Improving awareness of the roles of stakeholders involved in rail safety, (oversight bodies, operators, and other stakeholders), engaging all rail safety stakeholders in regular conversation, and increasing communication of the state of rail safety.

III. Continuing to focus on addressing the safety of at-grade crossings

Rationale

- Intentional changes in systems can often be the time when accidents occur, the potential for which is not captured by accidents measures, a lagging measure.
- Though federal guidance is provided, there is not a regulatory process for the oversight of implementation of new railroads.
- Agency roles do not appear to be universally understood by all stakeholders with roles to play in rail safety.
- There is room for improvement regarding regular communication by regulators with other rail stakeholders.
- Safety data is also not readily accessible as information to inform decision-making and ensure accountability by the public.
- At-grade crossing accidents remain persistent.
- Crossings blocked by trains were also identified as an increasing concern.

We make 15 recommendations, including recommendations to ensure adequate resources are provided for successful implementation and to avoid detracting from existing safety functions.



Most recommendations are specific to *railroads*, but do consider *transit*

- Certain federal requirements for transit oversight, including State Safety Oversight requirements and transit agency safety management systems are relatively new
 - Relatively small industry (four systems) → coordination less of an issue
 - WSDOT SSOA is already involved in oversight of certification process

- With the potential expansion in transit systems, important that the SSOA have the necessary resources to carry out this oversight
 - Existing funding model from FTA based on *existing* track-miles

- Recommendation to encourage collaboration between WUTC and WSDOT SSOA on areas of mutual interest



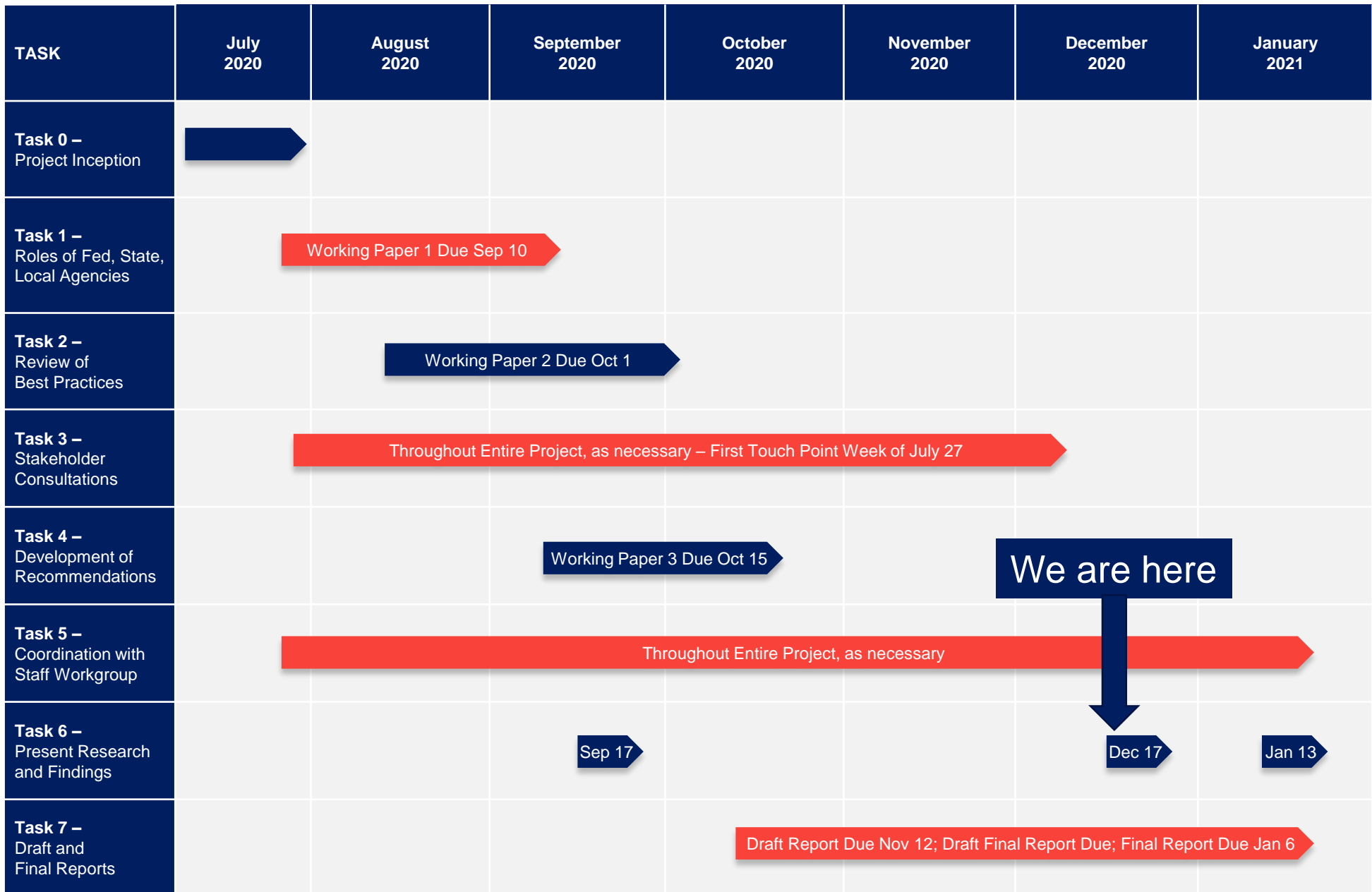
Regulators cannot ensure safety, but can ensure compliance, including that risks are being appropriately managed

- Railroad environment has and continues to evolve, creating safety opportunities and risks
 - New rail technology types, such as high-speed ground transportation
 - Increases in rail traffic and changes in hazardous materials shipped
 - Automation and other technologies, such as new forms of inspection

- WUTC has/is being asked to evolve from approving grade crossings and supplementing federal inspections, to implementing additional state-policy

- Without additional resources, additional functions may not be implemented, or worse, fulfillment of existing regulatory functions (e.g. inspections) put at risk
 - To the extent appropriate, regulations are necessary, but not sufficient conditions, to achieve desired result

Next steps – we will consider additional feedback and incorporate into a Final Report





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Thank you!
Any questions?

CPCS – a management consulting firm specializing in transportation strategy, policy and economic analysis

Formerly the consulting arm of the Canadian Pacific Railroad, independent since 1986.

Completed over
1,300 assignments
in more than
115 countries
including more than
200 assignments
in North America

Related projects:

- Florida Rail System Safety and Governance Study for the Florida state legislature
- Independent Reviews of Ohio's Rail Grade Crossing System
- Urban Rail Transit Safety Practices and Governances Models in Ontario



Additional slides

- Work plan details
- Jurisdictional scan results
- Selected additional findings
- List of recommendations





Work plan details



Budget proviso: Sec. 204 of the 2020 supplemental transportation budget (ESHB 2322)

(5)(a) \$235,000 of the multimodal transportation account—state appropriation is for the joint transportation committee to oversee a consultant study on rail safety governance best practices, by class of rail where applicable, and recommendations for the implementation of these best practices in Washington state. The study must assess rail safety governance for passenger and freight rail, including rail transit services, and must consider recommendations made by the national transportation safety board in its 2017 Amtrak passenger train 501 derailment accident report that are relevant to rail safety governance.

(b)The study must include the following components:

(i)(A)An assessment of rail safety oversight in Washington state that includes: (I)The rail safety oversight roles of federal, state, regional, and local agencies, including the extent to which federal and state laws govern these roles and the extent to which these roles would be modified should the suspended federal rules in 49 C.F.R. Part 270 take effect; (II)federal, state, regional, and local agency organizational structures and processes utilized to conduct rail safety oversight; and (III)coordination activities by federal, state, regional, and local agencies in conducting rail safety oversight;

(B)An examination of rail safety governance best practices by other states for the items identified in (a)of this subsection; and

(C)Recommendations for the implementation of best practices for rail safety governance in Washington state.

(ii)The study must address the extent to which additional safety oversight of rail project design and construction is used in other states and would be a recommended best practice for Washington state.

(c)The joint transportation committee shall consult with the Washington state department of transportation, the Washington state utilities and transportation commission, sound transit, the national transportation safety board, Amtrak, the federal railroad administration, BNSF railway company, one or more representatives of short line railroads, one or more representatives of labor, and other entities with rail safety expertise as necessary.

(d)The joint transportation committee must issue a report of its findings and recommendations on rail safety governance to the transportation committees of the legislature by January 6, 2021

Working group members were engaged throughout the study, including:

- Initial presentation of study approach
- A one-on-one interview
- Opportunity to comment on the final report
- Presentation of study findings

The FRA was invited but declined participation.

Members

Amtrak

BNSF Railway

Brotherhood of Locomotive Engineers and Trainmen - Washington State Legislative Board, IBT-Rail Conference

Central Puget Sound Regional Transit Authority (Sound Transit)

National Transportation Safety Board

Portland-Vancouver Junction Railroad

Transportation Division, Sheet Metal, Air, Rail, & Transportation Union

Washington State Department of Transportation

Washington Utilities & Transportation Commission

House and Senate Transportation Committees Staff

House and Senate Caucuses Staff

The work plan has three analytical steps, supplemented by consultations

		Deliverable
KQ1	Task 0 Project Inception	<ul style="list-style-type: none"> • Kickoff Meeting • Inception Report
	Task 1 Describe Roles of Federal, State, Regional, and Local Agencies	<ul style="list-style-type: none"> • Working Paper 1 – Mandates for Rail Oversight: Federal, State, Regional, and Local Agencies
KQ2	Task 2 Review of Best Practices for Rail Safety Governance	<ul style="list-style-type: none"> • Working Paper 2 – Best Practices in Rail Safety Oversight
KQ3 & KQ4	Task 3 Consultations with Agencies and Stakeholders	<ul style="list-style-type: none"> • Meeting Minutes and Summaries • Proposed improvements in Rail Safety Governance
	Task 4 Development of Recommendations	<ul style="list-style-type: none"> • Working Paper 3 – Recommendations for Implementation of Rail Safety Governance in Washington State
	Task 5 Coordinate with staff workgroup	<ul style="list-style-type: none"> • Monthly progress reports • Twice-monthly project status calls
	Task 6 Present research and findings	<ul style="list-style-type: none"> • Presentations to the Washington JTC • Presentations to the House/Senate Committees
	Task 7 Prepare draft and final reports	<ul style="list-style-type: none"> • Draft Report • Draft Final Report and Final Report (in electronic format)



We also carried out a targeted best practices scan

➤ Focused on where information on effectiveness and/or lessons learned can be readily gleaned and applied to Washington

➤ Literature review and discussions with selected experts from other jurisdictions

- Other states (Oregon, Texas, Illinois, Ohio, North Carolina, and New York)
- Other countries (United Kingdom, Canada and Australia)

➤ Issues to explore:

- Effective practices in the commissioning of new rail infrastructure and systems, including the roles and responsibilities of state entities
- Practices for ongoing communication between oversight agencies and regulated entities
- Practices for ensuring clarity in the roles and responsibilities of host and tenant railways
- Practices for enhancing safety at grade crossings and reducing trespassing occurrences
- Practices related to the safety of hazardous material transport

Through the jurisdictional scan, we identified 10 practices and lessons learned, that could be considered in Washington State

Theme

Example practices

Alternative institutional structures for rail safety oversight at the state-level

- Developing new standards for high-speed rail and programs for related safety improvements
- Combining railroad and transit regulatory oversight organizations

Additional requirements and resources for system safety programs

- Increasing oversight of change management processes
- Strengthening dialog with industry participants for system safety plans
- Specifying coordination requirements within emergency response plans
- Ensuring sufficient regulatory resources to oversee management system implementation at regulated entities

Practices for regulator data collection

- Hazardous material transportation data gathering, visualization, dissemination, and planning
- Requiring additional inspection data submittals from railways to inform planning

Mechanisms to improve communication and collaboration with stakeholders

- Practices to improve coordination with local municipalities concerning grade crossings and other planning issues
- Improving public reporting by regulator

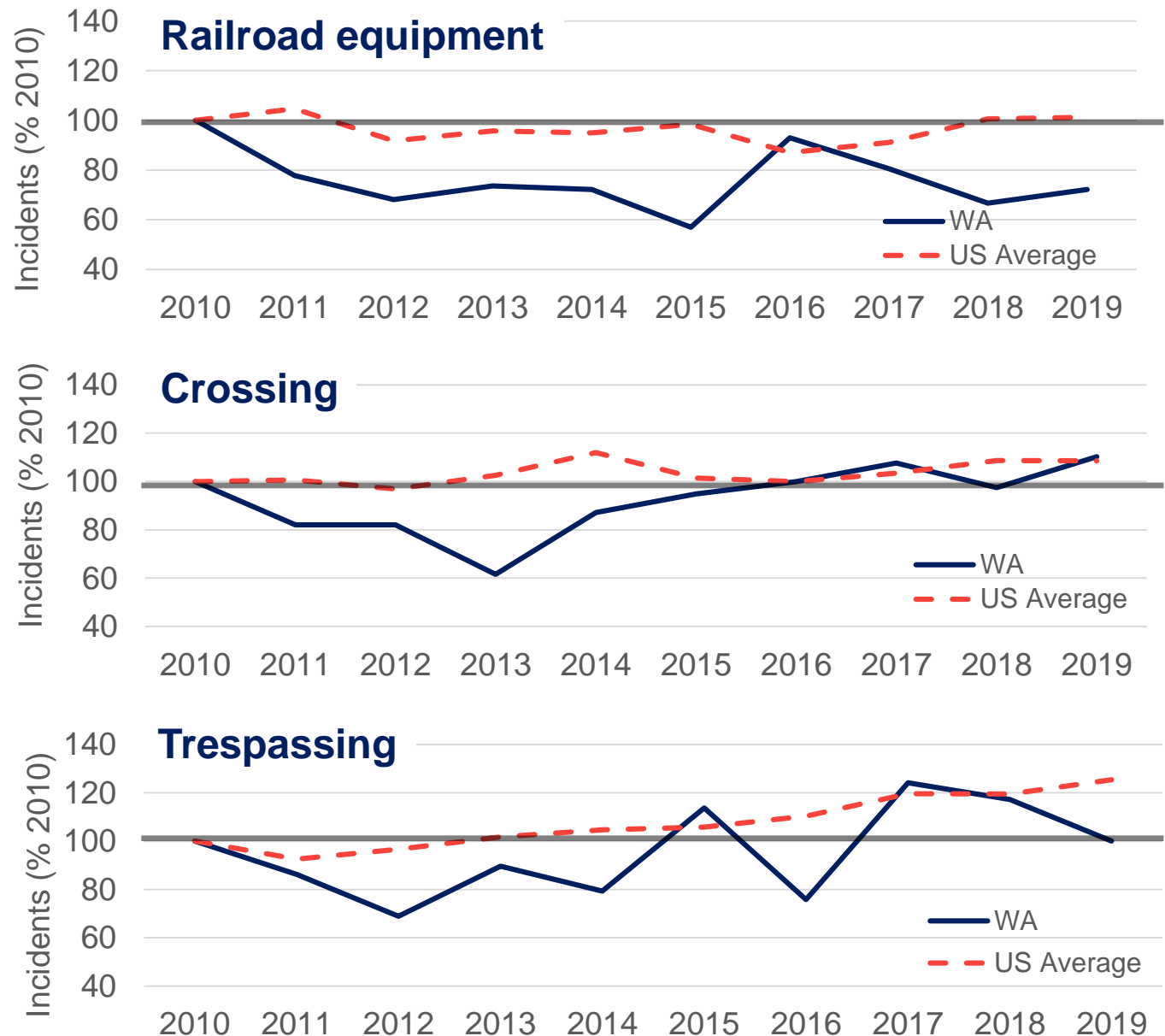


Selected additional findings



By certain metrics, rail safety performance has been improving over the last 10 years in Washington State

- However, **grade crossing** and **trespassing incidents** remain **persistent**
- Accidents metrics do **not** capture the full range of **economic, social, and environmental impacts** resulting from rail safety incidents, particularly low-likelihood but high-consequence events, such as the derailment in DuPont
- **Planned changes** in systems can often be the time when accidents occur, the potential for which is not captured by accidents measures, **lagging measure**

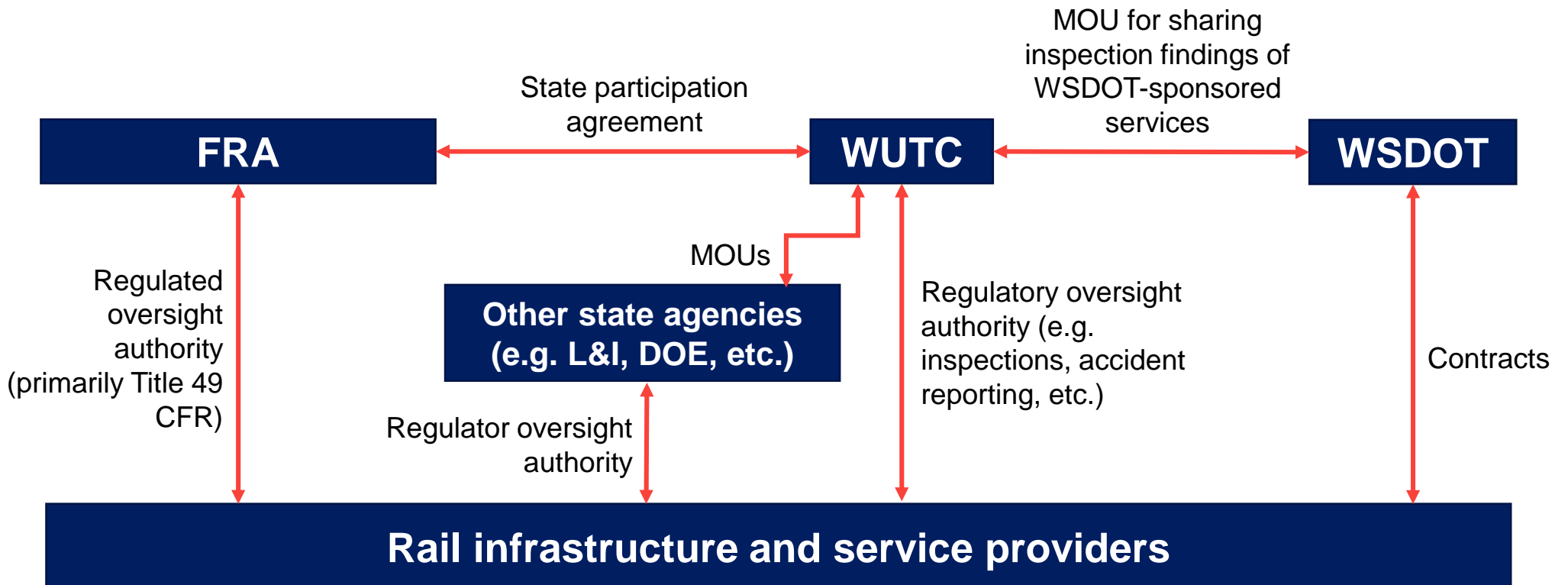


Source: CPCS analysis of FRA Safety Data, 2010–2019.

Having separate organizations responsible for overall transportation system policy and funding (i.e., WSDOT) and safety oversight (i.e., WUTC) is viewed as effective practice

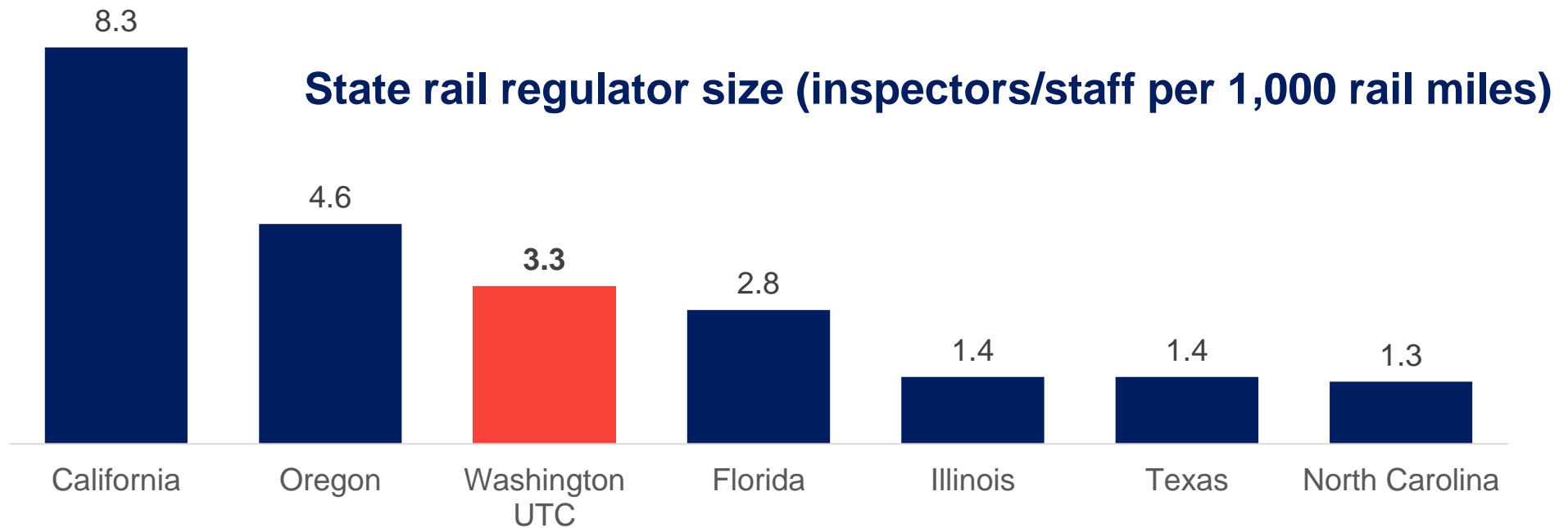
➤ Avoids conflict between roles

➤ However, the model (representation below) is not universally understood by all stakeholders



Railroad inspector staffing at the WUTC is appropriate given benchmarks from other states

- The WUTC has a larger regulatory program than some states, so additional resources are required to administer these rules
- Some recent mandates have not been funded



Note: In some cases, may or may not include supervisory staff (i.e. figures may not be strictly comparable). Source: CPCS compiled based on consultations and other sources. Rail miles from AAR, <https://www.aar.org/wp-content/uploads/2019/05/AAR-State-Rankings-2017.pdf>



List of recommendations



Given these findings, the current railroad safety oversight model is appropriate but could be further strengthened

Improving awareness of the roles of stakeholders involved in rail safety and increasing communication of the state of rail safety

Strengthening the role of the WUTC in overseeing system safety of operators **across the project lifecycle**, including the commissioning of new infrastructure

Continuing to focus on addressing the safety of **at-grade crossings**, which remain a persistent issue

Recommendation 3: Establishing a rail safety forum to provide an opportunity for information sharing amongst stakeholders involved in rail safety

Recommendation 7: Ensuring the WUTC has oversight authority over the commissioning process for new state-funded or intrastate rail infrastructure

Recommendation 12: Acting to prioritize and provide resources to improve safety at grade crossings

To ensure successful implementation, there is a need for the appropriate financial resources

Adequacy of funding level for railroad oversight

Appropriateness of funding model for systems in development – current model based on intrastate revenues (railroad) or existing track miles (transit)

Addressing at-grade crossings (current funding to WUTC-administered program ~\$500,000/bi-annually)

Recommendations 13: Based on the recommendations that the legislature determines it should implement, it should consider reviewing the fee cap level set in consultation with the WUTC to ensure the adequacy of resources to carry out the recommendations.

Recommendation 14:

14.1 The legislature should consider appropriating funding to the WUTC and WSDOT SSOA to oversee project implementation, based on the number and complexity of state-funded passenger rail systems in development.

14.2 WSDOT SSOA should coordinate with the FTA about best practices in providing oversight to systems in development, including whether there is an opportunity for the FTA to consider systems in development as part of their funding allocation model for State Safety Oversight.

12.2 To the extent, budgets allow, the legislature should appropriate additional funding to fund the implementation of “low cost” safety improvements at crossings, including mitigating the impacts of blocked crossings.

The current model for rail safety oversight in Washington state is appropriate, but could be further strengthened

➤ Recommendation 1:

1.1 The legislature should continue WUTC as the regulator of railroad safety and strengthen its role, as appropriate, in providing railroad safety oversight.

1.2 The legislature, after further consultation with the WUTC to ensure consistency across its regulatory roles, consider elevating the importance of promoting safety and security of the public and employees, and protection of the environment, by explicitly noting these priorities within the WUTC's rail safety oversight mandate.

➤ Recommendation 2:

2.1 The WUTC and WSDOT SSOA, in consultation with agencies that are regulated by both the FRA and FTA (e.g. Sound Transit), should explore opportunities for collaboration and sharing of best practices.

2.2 The WUTC and WSDOT SSOA should report to the legislature whether there are opportunities for joint initiatives to be funded by the legislature, such as auditor training, development of system safety guidelines, etc. through annual reporting.





Despite the strength of the regulatory model, there is not universal understanding of the role of organizations involved in railroad safety in Washington State

- **Recommendation 3:** The legislature should consider providing the WUTC direction and resources to convene an ongoing forum with stakeholders involved in rail safety.
- **Recommendation 4:** The legislature should consider directing the WUTC to make reasonable efforts to engage with municipalities in Washington State on a collective basis through relevant associations.



There is the opportunity to strengthen regulator's role in oversight of system safety across project lifecycles

- **Recommendation 5:** With input from the WUTC, the legislature should ensure the WUTC has the authority to oversee all aspects of railroad safety, including the system safety practices of railroad companies (i.e., the oversight of programs made under 49 CFR Part 270 [System Safety Program – Passenger] and 271 [Risk Reduction Program – Freight]).
- **Recommendation 6:** The WUTC should work with the FRA to ensure its State Safety Participation agreement encompasses oversight of the provisions of 49 CFR Part 270 and Part 271, in cooperation with the FRA.
- **Recommendation 7:** The legislature should consider granting the WUTC authority to oversee the process by which new and materially changed railroad operations in the state are implemented, which would apply at minimum to any state-funded passenger service and transit systems within the state.
- **Recommendation 8:** The legislature should consider directing the WUTC to establish a focus group to explore with relevant host and tenant railroads operating in the state existing information sharing practices between host and tenant railroads and opportunities for greater minimum standards for these practices.
- **Recommendation 9:** The legislature should direct the WUTC to review and amend the WAC, in particular WAC 480-62-310, to clarify which party is responsible for reporting accidents.



There is an opportunity to strengthen communication of the state of rail safety in Washington State

➤ Recommendation 10:

10.1 The legislature should consider requiring the WUTC (for railroads) to produce an annual state of rail safety report, including a profile of annual crash statistics in Washington State, details of accidents and their investigation, inspection activities performed, and enforcement action is taken. A similar report for transit systems is already required under RCW 81.104.115(9).

10.2 We would recommend that these reports on the state of safety for railroads and transit presented to the committee identified in Recommendation 2, be forwarded to appropriate government officials, and be publicly published.

➤ Recommendation 11: The legislature should consider directing the WUTC and WSDOT to:

11.1 Explore with Transport Canada and/or the Transportation Safety Board of Canada (TSB), and Oregon Department of Transportation the possibility of receiving reciprocal notification of incidents in a reasonable timeline involving multi-jurisdictional state-funded services.

11.2 Have the WUTC compile and analyze information regarding the safety performance of passenger rail service inclusive of information from neighboring jurisdictions and national datasets, and share this information with WSDOT.

Grade crossing accidents remain persistent, despite efforts to address, and stakeholders are concerned about blocked crossings

➤ **Recommendation 12:** The legislature should consider ensuring that appropriate state agencies can take action to support the implementation of low-cost solutions to improve crossing safety, address blocked crossings and promote reduced trespassing, including those attributed to suicides.

12.1 To the extent budgets allow, the legislature should provide additional funding to promote wider implementation of grade crossing safety improvements, trespass prevention, and low-cost mitigations to address blocked crossings.

12.2 To the extent budgets allow, the legislature should provide additional funding to enable the WUTC to conduct and/or support research into the effectiveness of novel at-grade crossing warning systems.

12.3 The legislature should consider granting the authority to the WUTC to expand the criteria for project selection of the Grade Crossing Protective Fund Program to encompass low-cost solutions to monitor and address blocked crossings where applicants can demonstrate a related safety concern, including blocking of emergency response vehicles.

12.4 The legislature should consider directing the WUTC and WSDOT to develop a focus group to review the 2017 study on Prioritization of Prominent Road-Rail Conflicts in Washington State, recommend improvements to ensure it can be used to prioritize high-safety risk crossings for improvement, and determine what funding and governance structure would be required to undertake this initiative.

12.5 State agencies should be working through state associations, continue to raise the importance of blocked crossings to communities, and encourage federal action to monitor and address the issue.



Enable other recommendations by ensuring sufficient resources for implementation

- **Recommendation 13:** Based on the recommendations that the legislature determines it should implement, it should consider reviewing the fee cap level set in consultation with the WUTC to ensure the adequacy of resources to carry out the recommendations.
- **Recommendation 14:**
 - The legislature should consider appropriating funding to the WUTC and WSDOT SSOA to oversee project implementation, based on the number and complexity of state-funded passenger rail systems in development.
 - WSDOT SSOA should coordinate with the FTA about best practices in providing oversight to systems in development, including whether there is an opportunity for the FTA to consider systems in development as part of their funding allocation model for State Safety Oversight.
- **Recommendation 15:** The legislature should consider providing funding to establish a rail research program or research program focus area to strengthen rail safety research.