



PRIORITIZATION OF PROMINENT ROAD-RAIL CONFLICTS

Advisory Panel Meeting

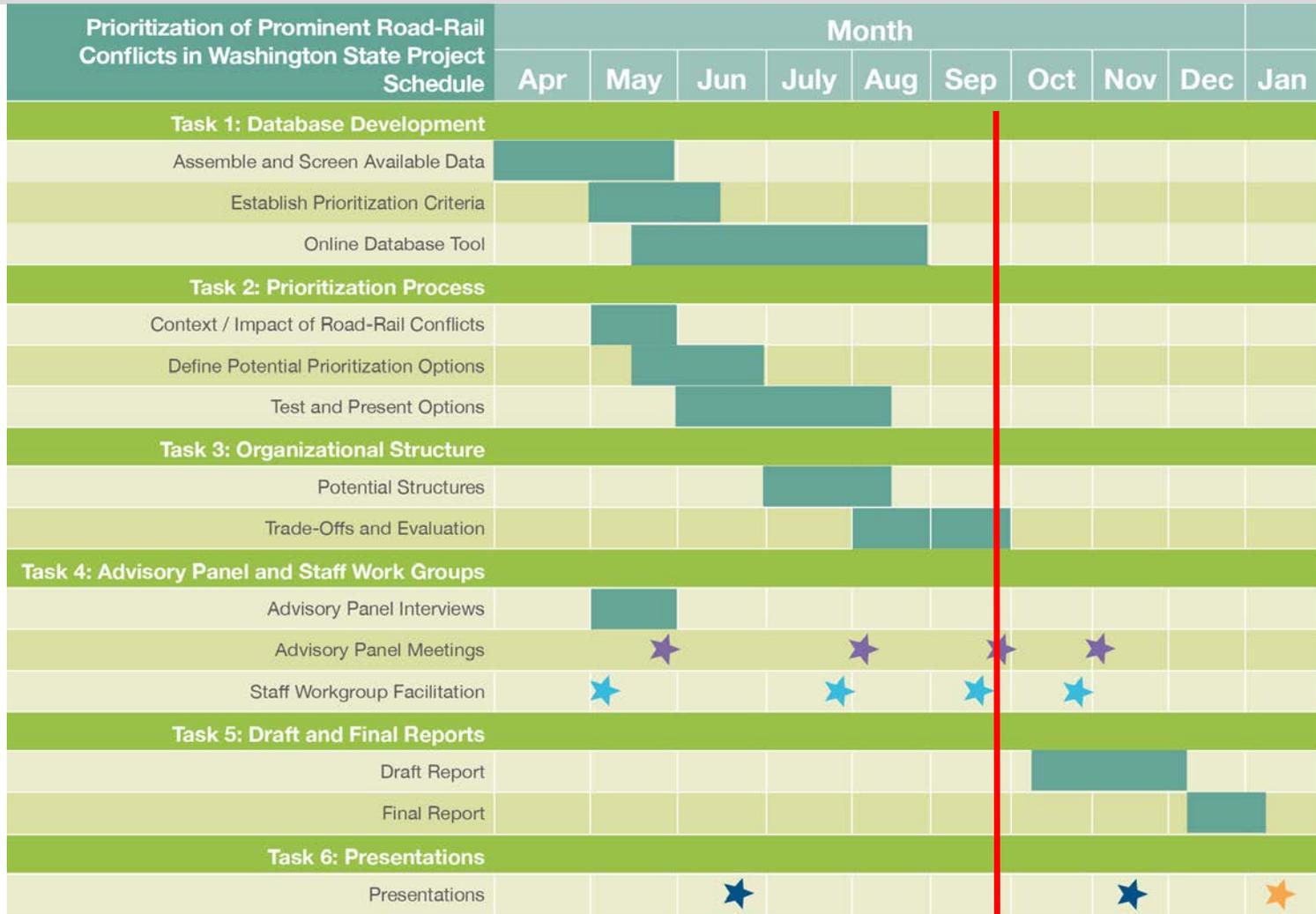
September 28, 2016

MEETING AGENDA

- Introductions
- Project Update
- Step 2 Prioritization Results
- Tool Sustainability and Governance
- Next Steps



SCHEDULE



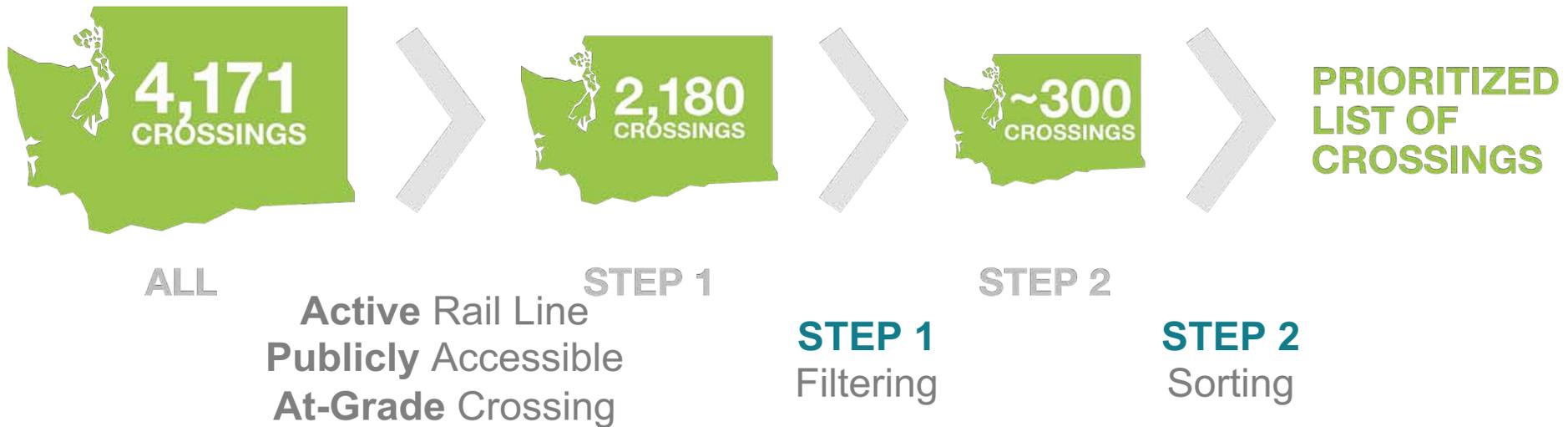
- ★ Advisory Panel Meeting
- ★ Staff Workgroup
- ★ Presentation
- ★ Presentation During 2017 Legislative Session

WE ARE HERE 3

STEP 2 RESULTS

- Overview of Process
- Results
- Key Questions

OVERVIEW OF THE PRIORITIZATION PROCESS



OVERVIEW OF THE PRIORITIZATION PROCESS

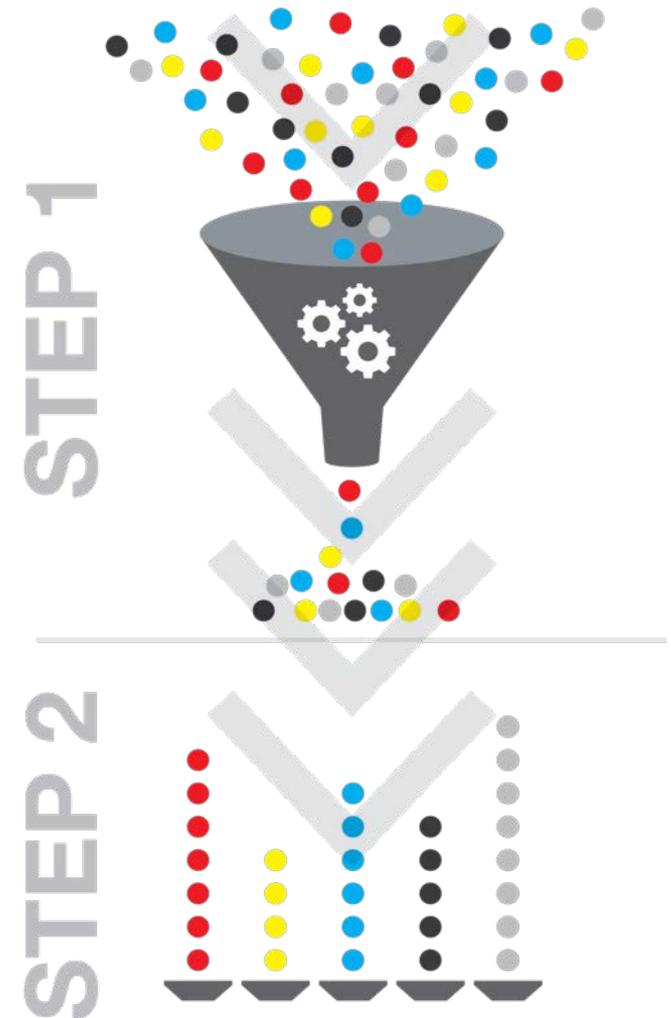
A **Two-Step Process** is being used to **filter and sort** crossings

STEP 1 (Filtering)

- All inclusive
- Less detailed assessment
- Intent is to not miss any important crossings
- Collect a candidate list of prominent crossings for further detailed evaluation

STEP 2 (Sorting)

- More detailed evaluation
- Collect and compile more specific data
- Compare and contrast
- Prioritize the most prominent crossings



OVERVIEW OF THE PRIORITIZATION PROCESS

Crossings are evaluated using three common criteria:



Common criteria that represent shared values in transportation. They are the Top Criteria for:

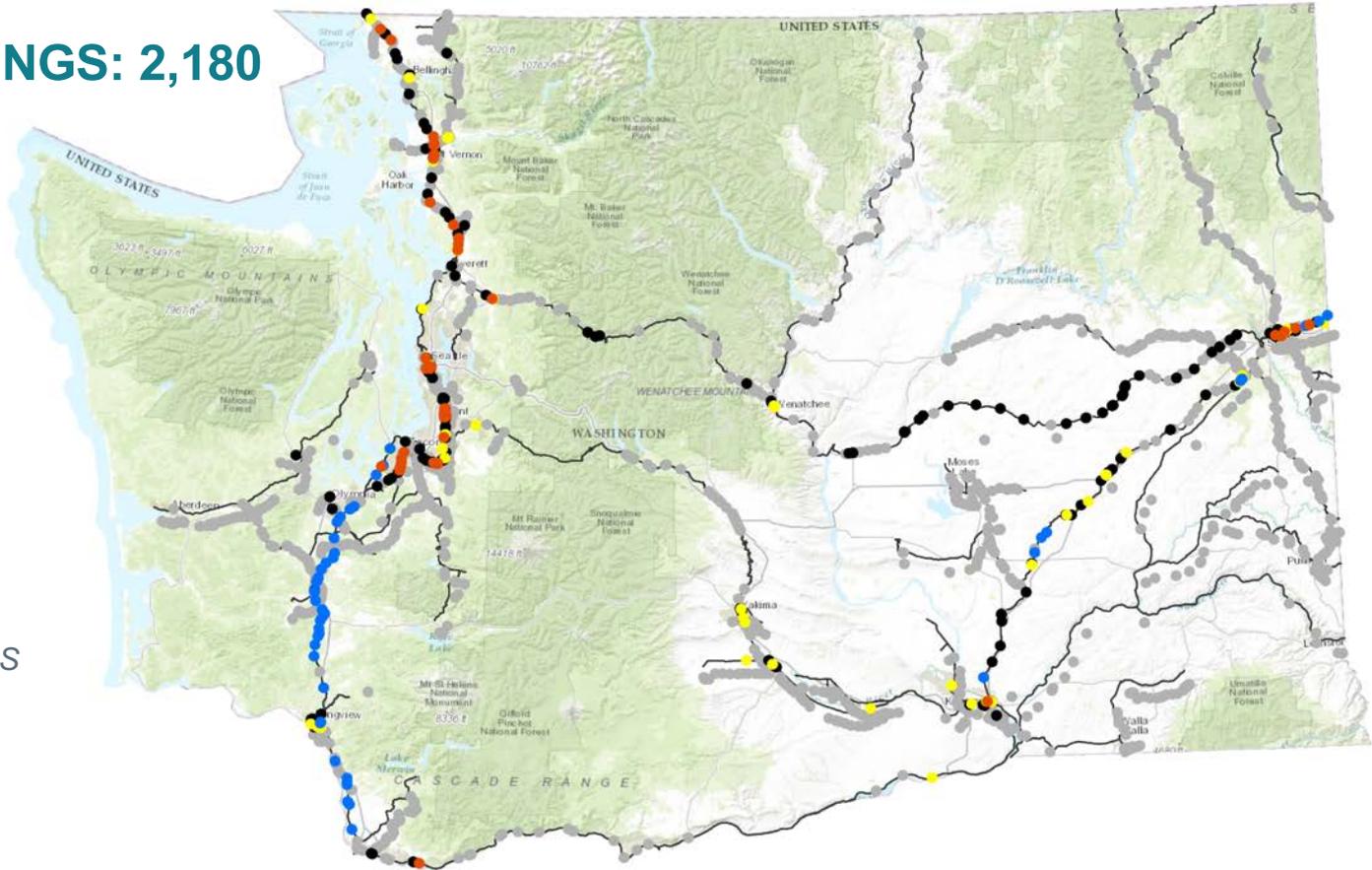
- Freight Mobility Strategic Investment Board
 - Transportation Improvement Board
 - California Public Utilities Commission for Rail Crossings Prioritization
 - FHWA Railroad-Highway Grade Crossing Handbook
 - USDOT TIGER Program
-
- Embody many sub-criteria, using quantifiable metrics
 - Discrete topics and little overlap of sub-criteria
 - Able to weight criteria based on community or agency priorities and needs
 - Able to summarize impacts or needs by criteria

STEP 1 RESULTS

PROJECT CROSSINGS: 2,180

302 selected crossings indicated in color moving to Step 2

- CROSSLINGS NOT SELECTED FOR STEP II PRIORITIZATION
- MOBILITY CROSSLINGS
- SAFETY CROSSLINGS
- COMMUNITY CROSSLINGS
- REMAINING HIGH AGGREGATE SCORE CROSSLINGS

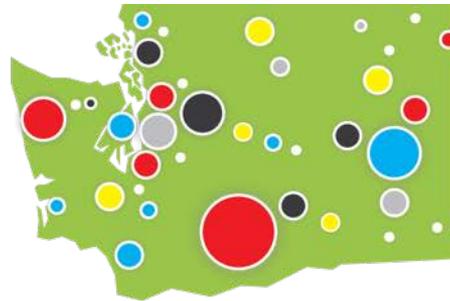


Note: Crossings that move to Step 2 under a particular category could also be higher scoring under other categories (i.e. a crossing with mobility concerns could also have safety concerns). This is because crossings that were selected for Step 2 in a previous category were removed from consideration in other categories to avoid duplication.

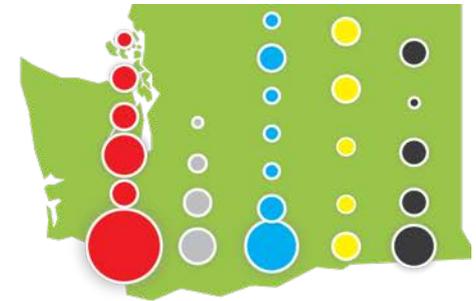
STEP 2 METHODOLOGY



STEP 2



EVALUATION



PRIORITIZATION

STEP 2

- More detailed evaluation
- Collect and compile more specific data
- Compare and contrast
- Prioritize the most prominent crossings

FEEDBACK RECEIVED FROM LAST MEETING

- Safety
 - Need to account for impacts to emergency services

- Mobility
 - Consider impacts that closures have on the surrounding transportation network

- Community
 - To address environmental, include an emissions measure
 - Consider incorporating freight corridors
 - Consider redefining the sub-categories as Human Health and Economy

STEP 2 METHODOLOGY



Increase Risks



1. Number of Alternate Grade-Separated Crossings
2. Number of Mainline Tracks
3. Proximity to Emergency Services

Safety Record



4. Incident History: Total
5. Incident History: Fatalities

Infrastructure Status



6. Level of Protection



Freight Demand



7. Roadway Freight Classification

People Demand



8. Existing Vehicle Volumes
9. Future Vehicle Volumes

Mobility Barrier



10. Network Sensitivity
11. Crossing Density
12. Gate Down Time



Economic



13. Employment Density
14. First/Last Mile Freight Facilities

Human Health



15. Population Density
16. Daily Emissions
17. Noise: Quiet Zones
18. Percent Minority
19. Percent Low-Income

STEP 2 METHODOLOGY - SCORING

Proposed Scoring



Increase Risks

30pts →

10pts
10pts
10pts

1. Number of Alternate Grade-Separated Crossings
2. Number of Mainline Tracks
3. Proximity to Emergency Services

Safety Record

30pts →

20pts
10pts

4. Incident History: Total
5. Incident History: Fatalities

Infrastructure Status

40pts →

40pts

6. Level of Protection



Freight Demand

15pts →

15pts

7. Roadway Freight Classification

People Demand

30pts →

20pts
10pts

8. Existing Vehicle Volumes
9. Future Vehicle Volumes

Mobility Barrier

55pts →

15pts
10pts
30pts

10. Network Sensitivity
11. Crossing Density
12. Gate Down Time



Economic

50pts →

25pts
25pts

13. Employment Density
14. First/Last Mile Freight Facilities

Human Health

50pts →

10pts
20pts
10pts
5pts
5pts

15. Population Density
16. Daily Emissions
17. Noise: Quiet Zones
18. Percent Minority
19. Percent Low-Income

STEP 2 METHODOLOGY - SCORING

STEP 1

Threshold Points

Above

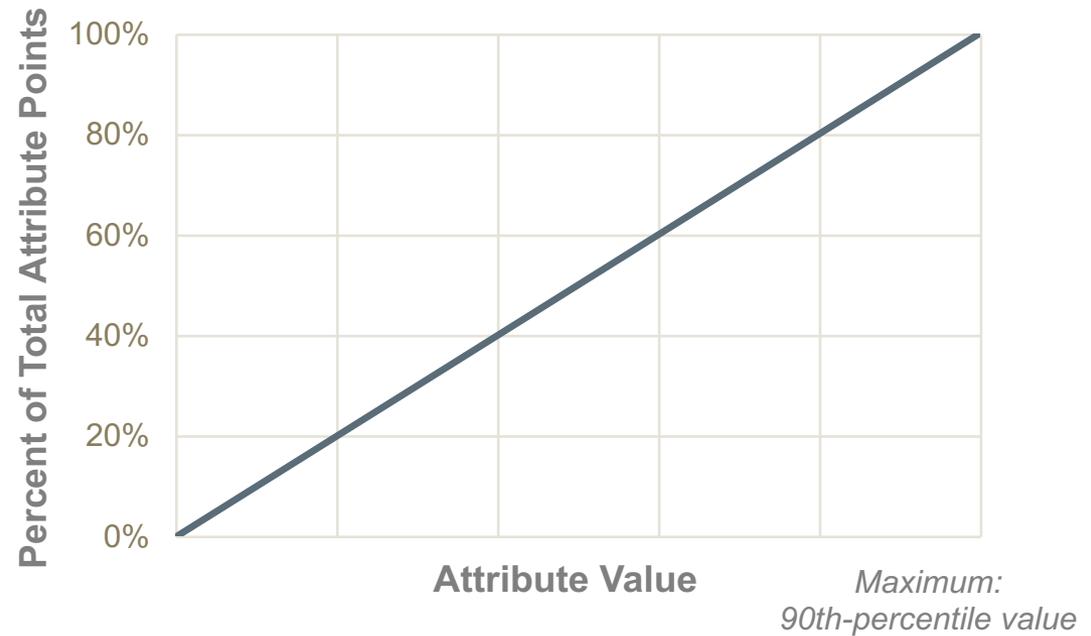
Maximum Points

Below

Minimum Points

STEP 2

Sliding Scale for Points



STEP 2 METHODOLOGY - SAFETY CRITERIA

	METRIC	HOW DOES CROSSING IMPACT PUBLIC SAFETY?
Increase Risks	1. Number of Alternate Grade-Separated Crossings	Emergency responders delayed if no alternate exists. Also, risky driver behavior may rise if better options are not available
	2. Number of Mainline Tracks	Risky driver behavior is more problematic with multiple mainline tracks
	3. Proximity to Emergency Services	Emergency responders may be delayed
Safety Record	4. Incident History: Total	Provides status of current safety history at crossing (all incidents)
	5. Incident History: Fatalities	Provides status of current safety history at crossing (fatalities only)
Infrastructure Status	6. Level of Protection	Provides level of current safety infrastructure at crossing

STEP 2 METHODOLOGY - MOBILITY CRITERIA

	METRIC	HOW DOES CROSSING IMPACT MOBILITY OF PEOPLE AND GOODS/SERVICES?
Freight Demand	7. Roadway Freight Classification	Shows freight roadway demand by tonnage
People Demand	8. Existing Vehicle Volumes	Shows existing vehicle demands
	9. Future Vehicle Volumes	Shows forecasted future vehicle demand
Mobility Barrier	10. Network Sensitivity	Shows the relative traffic sensitivity of vehicle network in vicinity of crossing
	11. Crossing Density	Indicates if multiple nearby crossings could be blocked by one train
	12. Gate Down Time	Down time shows traffic delay for non-rail traffic. Down time is based on the train type (unit, freight, passenger) and number of trains.

STEP 2 METHODOLOGY - COMMUNITY CRITERIA

	METRIC	HOW DOES CROSSING IMPACT COMMUNITY AND ECONOMY?
Economic	13. Employment Density	Higher density shows higher economic activity
	14. First/Last Mile Freight Facilities	Economic importance if crossing impacts first/last mile of freight routes
Human Health	15. Population Density	Higher density shows higher urban activity
	16. Daily Emissions	Provides total vehicle emissions expected near crossing due to gate down time and traffic volumes
	17. Noise: Quiet Zones	Indicates if possible noise impacts
	18. Percent Minority	Higher impact if close to minority populations
	19. Percent Low Income	Higher impact if close to low-income populations

STEP 2 RESULTS

Considered several weighting options

- **Option 1: Equal Weighting**
(Mobility 33.3%, Safety 33.3%, Community 33.3%)
- **Option 2: Mobility Only**
(Mobility 100%)
- **Option 3: Emphasis on Mobility**
(Mobility 50%, Safety 25%, Community 25%)

STEP 2 METHODOLOGY

How Crossings Were Scored

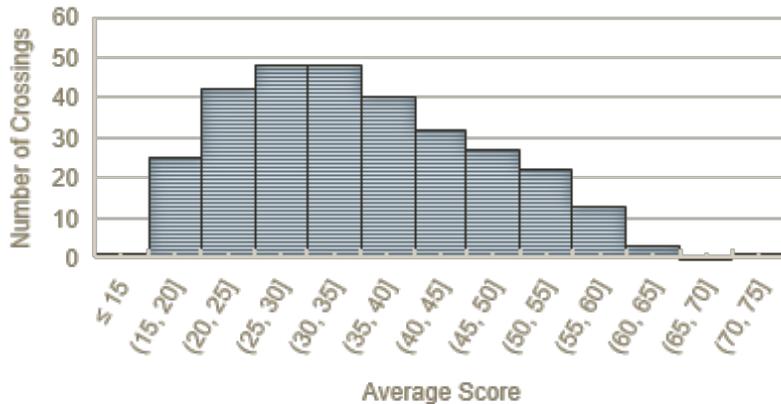
(example for discussion purposes, not a particular crossing)

DESCRIPTION	CRITERIA	SCORE (0-100)	PROPOSED WEIGHT (%)	FINAL SCORE (0-100)
Crossing impacts public safety	Safety	75	25%	84
Crossing impacts the mobility of people and goods/services	Mobility	85	50%	
Crossing impacts the economy and public health	Community	89	25%	

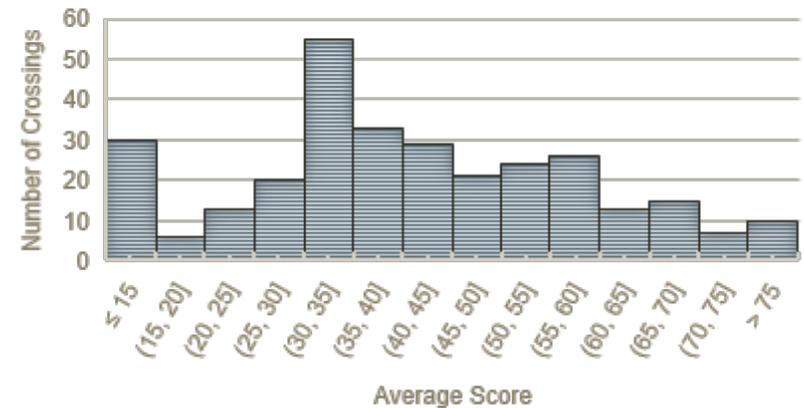
COMPARISON OF OPTIONS

- Distribution of scores under each option
- Top ranked crossings usually scored more than 50 points

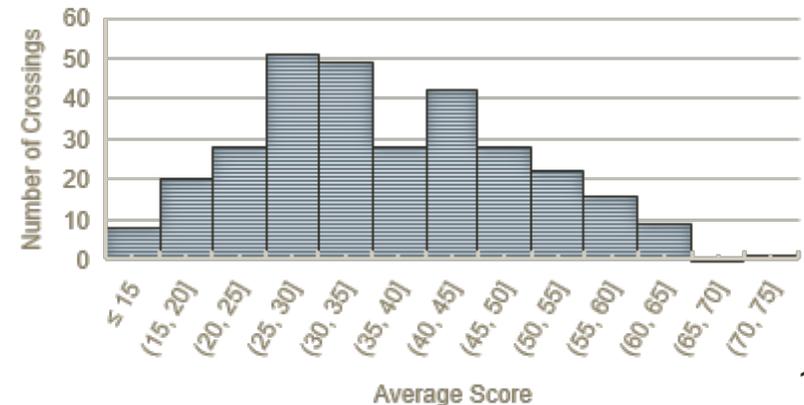
OPTION 1



OPTION 2



OPTION 3



EXAMPLE – DIFFERENCE IN RANKING

LOCATION

City: Spokane Valley
Roadway: Pines Road (SR 27)
Railroad: BNSF Mainline

	Option 1	Option 2	Option 3
Score	51.8	82.5	59.5
Rank	28	1	13



OBSERVATIONS

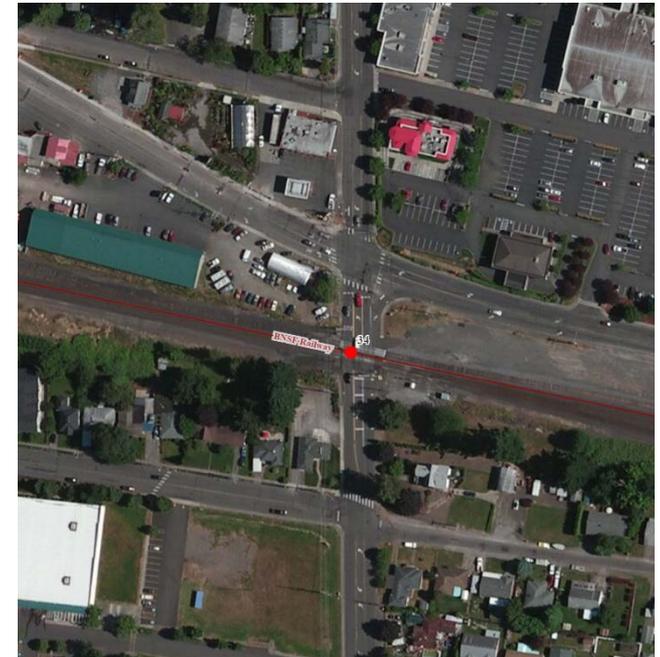
- Very high mobility score due to max points for vehicle volumes and gate down time
- Connects two state highways (SR 27 and SR 290) to I-90
- Very low safety score due to no recent incidents and high level of protection
- Grade separation project previously identified for this location

EXAMPLE – DIFFERENCE IN RANKING

LOCATION

City: Washougal
Roadway: 32nd Street
Railroad: BNSF Mainline

	Option 1	Option 2	Option 3
Score	39.7	68.0	46.8
Rank	104	21	67



OBSERVATIONS

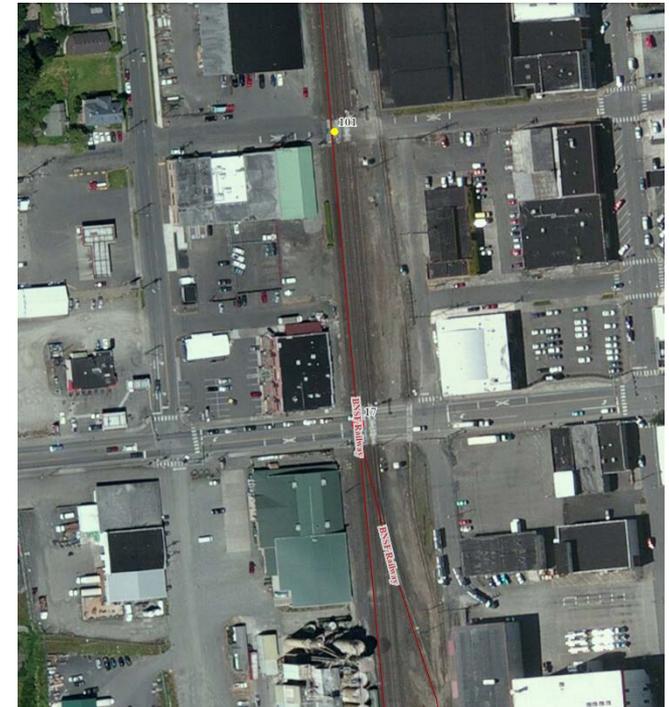
- High mobility score, very low safety score, and average community score
- Max score on gate down time, but average scores on number of vehicles
- Low safety score due to no recent incidents and high level of protection
- Average community score due to lower employment density (near more residential), and crossing is already a quiet zone

EXAMPLE – HIGH RANKING & NO PREVIOUS PROJECT

LOCATION

City: Chehalis
Roadway: Main Street
Railroad: BNSF Mainline

	Option 1	Option 2	Option 3
Score	53.3	68.3	57.0
Rank	21	19	21



OBSERVATIONS

- Higher scores in most categories
- In the City's downtown, surrounded by commercial businesses
- Connects I-5 with downtown Chehalis
- Several nearby crossings that ranked in the top 100
- No future project identified in RTPPO plan for any of the crossings

EXAMPLE – HIGH RANKING & NO PREVIOUS PROJECT

LOCATION

City: Yakima
Roadway: Yakima Avenue
Railroad: BNSF Mainline

	Option 1	Option 2	Option 3
Score	51.4	65.7	55.0
Rank	31	29	27



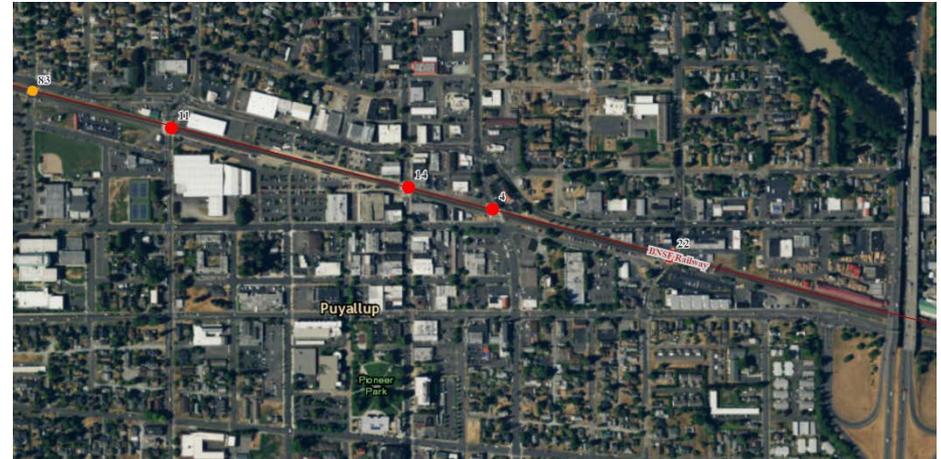
OBSERVATIONS

- Higher scores in most categories
- Lower train volumes
- In the City's downtown, surrounded by commercial businesses
- No future project identified in RTP/O plan
- City recently grade-separated crossings north and south of Yakima Avenue

EXAMPLE – SEVERAL HIGH SCORING CROSSINGS

LOCATION

City: Puyallup
 Roadways: See below
 Railroad: BNSF Mainline



Crossing	5 th St NW	Meridian (SR 161)	3 rd St SE	5 th St SE	15 th St SE
Score*	58.9	58.0	62.5	52.5	61.7
Rank*	15	17	4	40	5

**Based on Option 3*

OBSERVATIONS

- Five crossings within a 1.2 mile corridor
- In the City’s downtown, surrounded by commercial businesses
- Planned future extension of Canyon Road approx. 3 miles west of 5th St NW
- City recently grade-separated crossing at Shaw Road (just east of 15th St SE)

HIGH SCORING CROSSINGS WITH NO PROJECTS

Other crossings ranked high where no project has been identified by the RTPO.

Crossing*	City	Rank	Comments
Broad Street	Seattle	3	Provides access to the waterfront. Seattle has placed higher emphasis on other crossing improvements
Various	Seattle	7, 16, 26, 29	Branch lines with sporadic activity
Park Road	Spokane Valley	18	
Riverside Drive	Mount Vernon	30	
F St / Cheney-Spangle Rd	Cheney	31	
SR 20 / Avon Ave	Burlington	32	

**Removed projects in Chehalis, Puyallup, and Yakima based on the previous slides*

QUESTIONS ON STEP 2 RESULTS

- Do the results make sense? Do any results suggest that the database needs to be modified?
- Which weighting option best reflects the objectives of the study?
- What are the state and local interests in improving crossings? Does the prioritization tool capture those interests successfully?
- Is there additional information you need to be comfortable with the prioritization tool?

TOOL SUSTAINABILITY & GOVERNANCE

- Background
- Key Questions

WHAT DO WE MEAN BY TOOL SUSTAINABILITY?

The main product of this study is the crossing prioritization methodology and tool

- To remain useful in the future, the tool will need to be maintained and updated.
- Before we tackle who should maintain the tool we first need to answer the question:
Is this a useful tool and should it be maintained?
- Depending on the answer, there are at least two scenarios (described on slide 30) with implications for who maintains the tool.
- We use the term **staffing** as shorthand for ownership and maintenance of the tool.

WHAT DO WE MEAN BY GOVERNANCE?

The study asked us to address governance

- In the absence of a funding program with stated intent and objectives, identifying an appropriate governing body is difficult. Without funding, governance is likely unnecessary.
- We are not recommending a single agency or board. Rather our report will layout a framework for how to think about it should a program be funded.
- There are two scenarios related to governance outlined on slide 31.
- We use governance to refer to candidate organizations that would make funding recommendations.

ASSUMED SCENARIOS FOR STAFFING

SCENARIO 1: DO NOTHING

- The tool goes to AWC as sponsors of the study and it is up to them to secure funding to maintain the tool.
- The JTC will keep a copy of the tool and make it available to anyone who requests it.
- Without funding there is no online mapping function and the tool consists only of the Excel Workbook.

SCENARIO 2: FUNDING SECURED FOR THE TOOL

- The tool continues to be updated and maintained (organization TBD) and the online mapping function is publically available.

**With either scenario the tool is likely to be used by various organizations (RTPOs, local DOTs, etc.) to help with preparation of different funding applications and project lists*

ASSUMED SCENARIOS FOR GOVERNANCE

**In all scenarios, we assume a grant program has been funded.*

SCENARIO 1: DECISION MAKING BY A BOARD/COMMITTEE

- This could be an existing, ad hoc, or new board.
- Mission alignment will be important if the board is to be seen as fair and objective, especially as funding is involved.

SCENARIO 2: DEVELOP FUNDING CRITERIA AND A SELECTION PROCESS

- Funding criteria are developed (this could include legislative direction, public comment and/or significant stakeholder involvement) along with scoring.
- Proposals are reviewed and scored by an existing granting agency (e.g. WSDOT Local Programs, FMSIB, TIB) and funding recommendations go to the Legislature.

WHAT IS NEEDED TO MAINTAIN THE TOOL?

- Excel and GIS capabilities.
- ArcGIS Online requires an annual license.
- The data and maps will need to be moved to a final web location.
- Maintenance of the tool would include troubleshooting issues as they come up, quarterly back-up, and periodic updates.
- Familiarity with the data, and any limitations, would be helpful as data will need to be updated periodically.
- Assuming the tool is made available to other entities to manipulate, the staff will need to train and answer questions from new tool users or address problems with the online platform.
- Ideally, an existing staff person or team would absorb the work, or a part-time position is created depending on how often the tool is used and the level of technical assistance required.

TOOL SUSTAINABILITY & GOVERNANCE

The Project Team and Advisory Panel members (through interviews) identified several candidate organizations that could be considered to provide staffing, governance, or both.

- **Freight Mobility Strategic Investment Board (FMSIB)**
- **Transportation Improvement Board (TIB)**
- **Utilities and Transportation Commission (UTC)**
- **WSDOT**
- **Association of Washington Cities (AWC)**
- **Joint Transportation Committee (JTC)**



TOOL SUSTAINABILITY: STAFFING

CRITERIA	FMSIB	TIB	UTC	WSDOT	AWC	JTC*
Has staffing capabilities currently to maintain/update tool				✓	✓	
Staff and/or members/constituents would benefit from ongoing maintenance			✓	✓	✓	

*Other legislative agencies have the capability to maintain the tool (LEAP for example). The House and Senate Transportation Committees could use the tool to assist in making funding decisions.

TOOL SUSTAINABILITY: GOVERNANCE

CRITERIA	FMSIB	TIB	UTC	WSDOT*	AWC	JTC
Public/private mix of members on Board	✓	✓		n/a		
Geographic diversity of members on Board	✓	✓		n/a	✓	✓
Currently oversees grant applications and/or funding	✓	✓	✓	✓		
Currently addresses rail conflicts	✓	✓	Sec 130 ✓	Sec 130 ✓		
Mission addresses diverse transportation interests	freight	✓		✓	✓	✓

*WSDOT has no governing board but administers and awards grants.

+ The tool prioritizes locations and not projects. Locations may or may not have projects associated with them.

KEY QUESTIONS

- Does the framework for thinking about governance make sense?
 - Are there any key considerations missing?
- Which organization (if any) do you think is best suited to take on tool sustainability?
 - What are the pros and what are the cons?

NEXT ADVISORY PANEL MEETING

NOVEMBER 2nd (10:00am to 3:00pm)

Location: Olympia, John A. Cherberg Building Room ABC

TOPIC: Review Draft Document

MORE INFO

<http://leg.wa.gov/JTC/Pages/Road-Rail-Study.aspx>

Beth Redfield

JTC Project Manager

360.786.7327

beth.redfield@leg.wa.gov

Jon Pascal, PE

Consultant Project Manager

425.896.5230

jon.pascal@transpogroup.com

APPENDIX

FREIGHT MOBILITY STRATEGIC INVESTMENT BOARD

MISSION & PURPOSE

- Finances freight mobility projects; finds solutions that lessen the impact of the movement of freight on local communities; advocates for strategic freight transportation projects that bring economic development and a return to the state
- Serves as the de facto freight mobility project screening agency for state and federal policy makers; money comes through WSDOT Local Programs

BOARD

Board members – Twelve members appointed by the governor for 4- year term (2- year initial term)

- **Chair**
- **WSDOT Secretary**
- **Office of Financial Management Representation**
- **Local Government Representation -**
Mayor of Cheney, Deputy Mayor/Councilmember of Fife, Pierce County Public Works Director, & Cowlitz County Commissioner
- **Industry Representation – Marine, Port Districts, Railroad and Trucking**

STAFF

- Ashley Probart, Executive Director
- Three confidential secretaries
- Assistance from County Road Administrative Board
- **GIS** - Does not Have GIS staff



TRANSPORTATION INVESTMENT BOARD

MISSION & PURPOSE

- Independent state agency established by the Legislature to distribute and manage transportation related construction and maintenance grants to cities and counties

BOARD

Board members – Twenty-one member board, members appointed by the Secretary of Transportation to four-year staggered terms, with the exception of the CRAB representative and the Governor's appointee

- **Six City Members**
- **Port Representative**
- **Six County Members**
- **Governor Appointee Currently from OFM**
- **Two WSDOT Officials**
- **Non-Motorized Transportation Representative**
- **Two Transit Representatives**
- **Special Needs Transportation Representative**

STAFF

- Steve Gorcester, Executive Director
- Five Engineers
- Research Analyst
- IT Systems Specialist
- Two Assistance
- **GIS** – Does not have GIS staff



UTILITIES AND TRANSPORTATION COMMISSION

MISSION & PURPOSE

- Protects consumers by ensuring that utility and transportation services are fairly priced, available, reliable, and safe
- *Regulates* various utility and transportation businesses as well as safety issues affecting select industries, including rail

EXECUTIVE LEADERSHIP

Executive Leadership – Members appointed by the governor and confirmed by the state senate
UTC has an extensive leadership structure. Rail safety falls under the purview of the following members:

- **Dave W. Danner, Chairman**
- **Ann Rendahl, Commissioner**
- **Philips Jones, Commissioner**
- **Steve King, Executive Director/Secretary**
- **Pat Hazzard, Director of Safety & Consumer Protection (including Transportation Safety**

STAFF

- 13 Railroad Staff
- 10 Transportation Staff
- **GIS** – Does not have GIS staff?

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

MISSION & PURPOSE

- WSDOT manages the multimodal transportation system; responsible for ensuring that people and goods move safely and efficiently.
- Freight System Division works in partnership with others to maintain and improve railroads.
- Local Programs Division passes through federal and state funding to local jurisdictions and provides technical assistance to recipients

WSDOT EXECUTIVE LEADERSHIP

Executive Leadership

WSDOT has an extensive leadership structure.

Rail safety falls under the purview of the following members:

- **Roger Miller, Secretary of Transportation**
- **Keith Metcalf, Deputy Secretary**
- **Amy Scarton, Asst. Secretary of Community & Economic Development**
- **Ronald Pate, Director of Rail, Freight, and Ports Division**

FREIGHT SYSTEM DIVISION STAFF

- 5 Staff Members in Addition to Director of Rail, Freight, and Ports Division
- 33 Staff Members, Including ED
- **GIS** – WSDOT has significant GIS capacity

ASSOCIATION OF WASHINGTON CITIES

MISSION & PURPOSE

- Private, non-profit, non partisan corporation that represents all 281 Washington's cities and towns before the state legislature, the state executive branch, and regulatory agencies
- Legislative agenda includes transportation issues impacting cities and towns

BOARD OF DIRECTORS

- **Jim Restucci (City of Sunnyside, Mayor), President**
- **Pat Johnson (City of Buckley, Mayor), Vice President**
- **21 Mayors and City Councilmembers**
- **City/County Management Association**

STAFF

- Over 50 Staff, Including Database Developer
- **GIS** – Currently has staff with GIS capabilities. Unknown whether it's in the position described and would be replaced with a new hire.



JOINT TRANSPORTATION COMMITTEE

MISSION & PURPOSE

- Legislature established the JTC in 2005 to review and research transportation programs and issues to better inform state and local government policymakers, including legislators

EXECUTIVE COMMITTEE

Executive Committee comprised of the chairs and ranking members of the House Transportation Committee and the Senate Transportation Committee. The chairs of the HTC and the STC serve as co-chairs of the JTC

- Rep. Judy Clibborn, House Transportation Committee Chair
- Rep. Ed Orcutt, House Transportation Committee Ranking Minority Member
- Senator Curtis King, Senate Transportation Committee Chair
- Senator Steve Hobbs, Senate Transportation Committee Ranking Minority Member

STAFF

- Mary Fleckenstein, JTC Coordinator
- Beth Redfield, Senior Policy Analyst
- Alyson Cummings, Policy Analyst
- Sonia Plasencia, Accounting/Committee Assistant
- **GIS** – Does not have GIS staff



Washington State Legislature