

# Transportation Asset Management Webinar Series

## Webinar 41

## TAMP Consistency Review Process

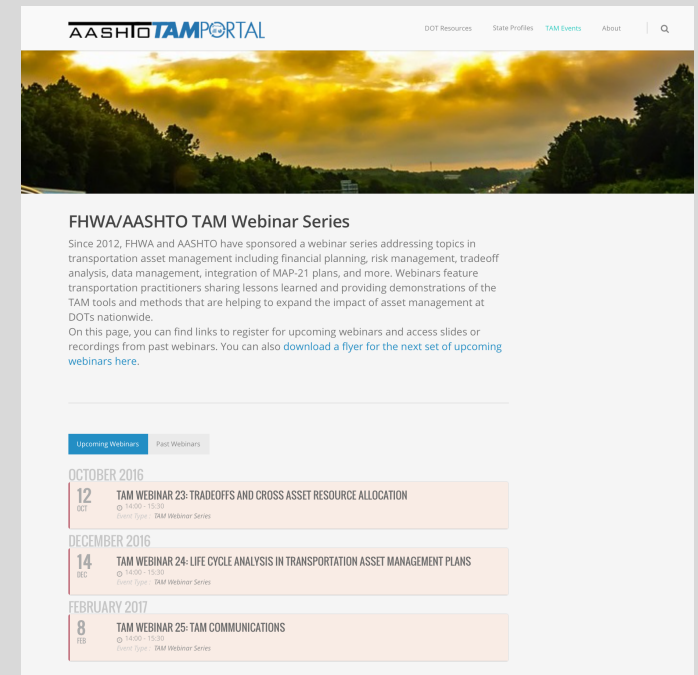
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**Webinar 41 – December 11, 2019**

# FHWA-AASHTO Asset Management Webinar Series

- This is the 41<sup>st</sup> in a webinar series that has been running since 2012
- Webinars are held every two months, on topics such as off-system assets, asset management plans, asset management and risk management, and more
- We welcome ideas for future webinar topics and presentations
- Submit your questions using the webinar's Q&A feature



# Learning Objectives

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- Building working knowledge of key concepts and definitions relevant to transportation asset management plans and the TAMP consistency review process
- Beginning to apply this knowledge to better understand the TAMP consistency review process
- Sharing lessons learned, ideas, and knowledge!

# Webinar Agenda

- 2:00 Webinar Introduction**  
Matt Hardy (AASHTO)  
Hyun-A Park (Spy Pond Partners, LLC)
- 2:10 Topic Overview**  
Steve Gaj (FHWA)
- 2:20 Minnesota Process**  
Brad Utecht, Minnesota DOT
- 2:30 Wyoming Process**  
Emily Selby, Wyoming DOT
- 2:40 Washington State DOT Process**  
Locke Craig-Mickel, Washington State DOT
- 2:50 Q&A**
- 3:30 Wrap Up**

# Welcome and Overview

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- FHWA and the AASHTO Sub-Committee on Asset Management are pleased to sponsor this webinar
- Sharing knowledge is a critical component of advancing asset management practice

# Timeline



- **Certification:** A State DOT must update its asset management plan and asset management plan development processes **at least every 4 years, beginning on the date of the initial FHWA certification** of the State DOT's processes (23 CFR 515.13(c)). Therefore, the latest date for recertification is in 2022 (in approximately 2 years and 9 months).
- **Consistency Determination:** Not later than **June 30, 2020** and each year thereafter: State DOTs shall submit documentation to demonstrate implementation of the plan. (About 6 months away.)
  - Therefore, State DOTs with the Divisions should address issues raised, such as those identified as extenuating circumstances related to the consistency determination. (funding and work types, management systems, etc.)

# MnDOT Consistency Review



See Handout



# WYDOT Consistency Review Process Overview

December 11, 2019



# WYDOT FY2018 Consistency Review Investment Summary



Work Type	Programmed Amount	STIP Expenditure	Difference
<b>Pavement</b>			
Maintenance	\$10,000,000	\$22,410,488	\$12,410,488
Preservation (1S)	\$10,000,000	\$13,469,616	\$3,469,616
Rehabilitation (2S + 3S)	\$125,000,000	\$144,267,921	\$19,267,921
New Construction/ Reconstruction	\$20,000,000	\$30,667,383	\$10,667,383
<b>Pavement Total</b>	<b>\$165,000,000</b>	<b>\$210,815,408</b>	<b>\$45,815,408</b>
<b>Bridge</b>			
Maintenance	\$0	\$707,497	\$707,497
Preservation	\$26,000,000	\$20,784,514	(\$5,215,486)
Rehabilitation	\$0	\$0	\$0
Reconstruction (Replacement)	\$5,000,000	\$5,470,174	\$470,174
New Construction	\$0	\$0	\$0
<b>Bridge Total</b>	<b>\$31,000,000</b>	<b>\$26,962,185</b>	<b>(\$4,037,815)</b>

# WYDOT Consistency Review

- Pavement Lessons Learned:
- WYDOT spent more on pavement maintenance than it had initially programmed in the TAMP – due to internal maintenance force dollars not accounted for in the STIP.
- We met our cumulative treatment mileages for the year (actual treatment mileages were greater than the PMS funding miles recommended).
- 84% of PMS recommended mileages were completed, remaining pavement dollars spent on non-PMS recommended roadway sections.
- Need to conduct further analysis as to the distribution of treatment mileages met across the districts, to ensure that the proper treatments (light, moderate, heavy) are being applied proportionately.



# WYDOT Consistency Review



- Bridges Lessons Learned:
- WYDOT spent \$4M less on bridge preservation than programmed.
- Overall, WYDOT spent less than what it had programmed for its Bridge assets. However, since the STIP is based on a 6-year improvement program, bridge funding average should balance out in future years to the programmed expenditure levels over the 6-year time frame.
- WYDOT intends to hone in on the programmed funding amount for bridge expenditures (initial examination of FY2019 Consistency Review investment analysis show we are getting closer to the programmed amount for bridges).
- The bridge candidate list square footage targets were initiated last year, with a starting year of 2020, so we do not yet have a clear picture on the tracking of bridge treatments by NBI condition state for performance monitoring.



# WYDOT Consistency Review

- Overall Lessons:
- Our consistency review showed that our funding allocations were reasonably consistent with the investment strategies in our TAMP.
- Performance is measured not based on dollars spent, but on the achievement of work performed and resultant improvements to the system. To meet future performance targets, the asset must be moved from one condition state to a higher (better) condition state.
- Spent more on New Construction (~ \$30M) than what was programmed. Some of the STIP mobility/expansion initiated before the adoption of WYDOT's preservation philosophy (legacy projects).
- Moving forward, there will need to be greater scrutiny of mobility-type projects – often undertaken due to political influence – to be more in alignment with WYDOT's preservation philosophy, and to make sure that we are following through on the message we are conveying to the public.



# Questions?



- Emily Selby, WYDOT, Asset Management Coordinator
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- (307)777-4188

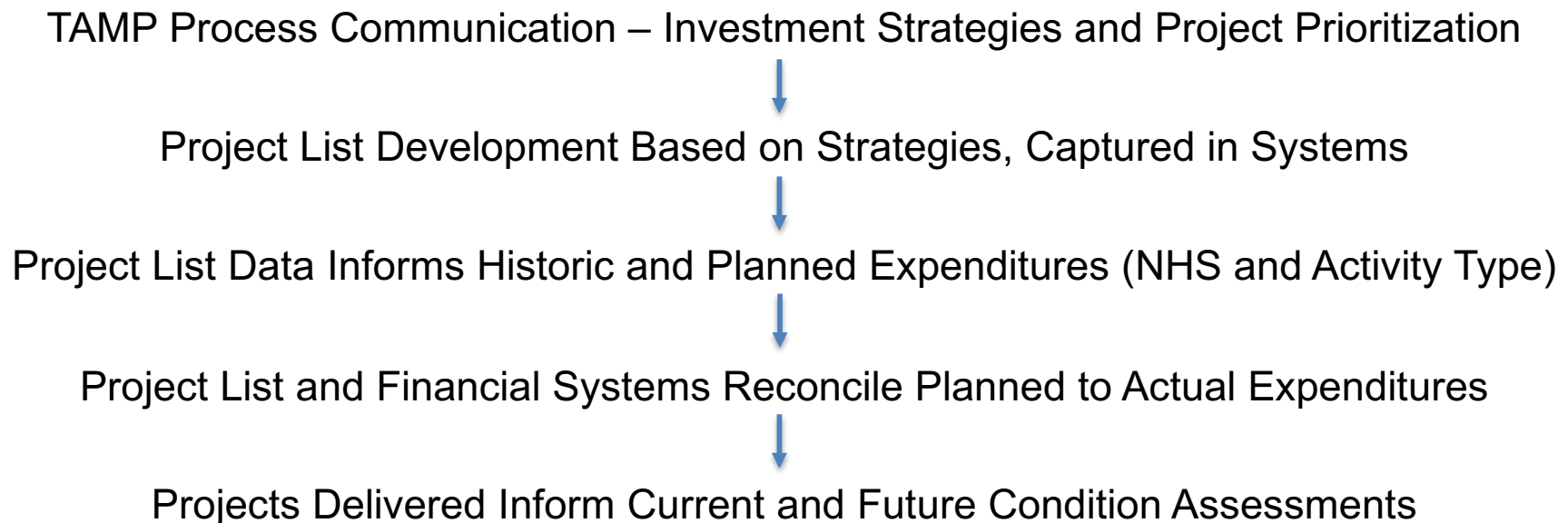
# **WSDOT's TAMP Consistency Review Process**

Locke Craig-Mickel, Highway Asset Manager  
December 11, 2019

# Consistency Review – Thought Process

Not sure if this is the best way...

How do we demonstrate implementation of the asset management strategies and connect investment strategies to projects and network performance?



# Consistency Review – TAMP Communication

2019 TRANSPORTATION ASSET MANAGEMENT PLAN (MAP 21)

## CHAPTER 8 INVESTMENT STRATEGIES

**T**he previous chapters, including Life Cycle Planning, Revenue and Financials, and Performance Scenarios, collectively explain the direction for WSDOT's investment strategies.

From a statewide perspective, investment strategies are communicated annually as part of the [Project Delivery Plan](#), which in turn meets requirements for the [Statewide Transportation Improvement Program \(STIP\)](#). This chapter details prioritization methodologies for pavement and bridges, funding targets, current updates to the Project Delivery Plan and STIP, and concludes with a discussion on how the NHS pavements and bridges fit within them.

### Prioritization of Projects

WSDOT uses the results from *Life Cycle Planning, Revenue and Financials, and Performance Scenario Analysis* as the foundation for setting the direction in its investment strategies. For state-maintained pavements and bridges, the results from these analyses are directly incorporated as part of project prioritization. This section details WSDOT's current practice for pavement and bridge project prioritization and investment.

### Pavement Prioritization

Pavement needs are identified before pavement projects are scoped. Pavement needs are initially identified based on annual condition surveys, which are entered and analyzed in the Washington State Pavement Management System (WSPMS). The foundation of a needs assessment are pavement deterioration models and activities based on lowest life cycle cost management. WSDOT's Capital Program Development and Management Division (CPDM) then issues Regions project scoping instructions that recommend investment funding target levels for each major pavement type. WSDOT Regions use the information to scope projects in WSDOT's Capital Project Management System (CPMS) with a parametric cost for all identified needs. Once the pavement project list has been identified, projects are then grouped by investment areas.

Pavement preservation investment areas are based on primary material type and includes three areas: asphalt, chip seal, and concrete (reflected in Exhibit 8-1). Strategic maintenance is reported as part of the asphalt investment. Chip seal over asphalt is reported as part of the chip seal investment area. Crack, seal and overlay with asphalt is reported as part of the concrete investment area.

Exhibit 8-1: Roadway Preservation Investment Areas

Investment Area	Primary Activities
Asphalt	Asphalt Resurfacing; Strategic Maintenance; Asphalt Reconstruction.
Chip Seal	Chip Seal Resurfacing; Chip Seal Conversion (Chip Seal on Asphalt); Strategic Maintenance.
Concrete	Diamond Grinding; Select Panel Replacement; Concrete Reconstruction; Crack, Seal and Overlay with Asphalt; Dowel Bar Retrofit; Strategic Maintenance.

Exhibit Note: Source is from the WSDOT Pavement Branch of the Materials Laboratory.

Priority lists are developed for asphalt, chip seal and concrete projects. All projects are reviewed to ensure that the proposed project is the lowest life cycle cost alternative to meet the needs of the section. Prioritization takes into account three core principles for all projects: avoiding future liability, asset use, and life cycle cost.

#### Avoiding Future Liability

If deferral of an activity results in a high certainty that more costly work will be needed, such as reconstruction, this type of project becomes the highest priority. This prioritized decision also avoids having a section of roadway deteriorate into a state that leaves the agency with two choices: worst first management or leaving a section in a very poor state.

Using "Avoiding Future Liability" as the highest priority prioritizes the following work activities: strategic

2019 TRANSPORTATION ASSET MANAGEMENT PLAN (MAP 21)

maintenance (crack sealing, patching), chip seal conversions, and any project that reduces the near-term risk of needing reconstruction.

#### Asset Use

The next primary consideration is asset use. This is done by normalizing the life cycle cost by the annual truck use. While both life cycle cost and asset use are used in one metric (dollars per lane mile year per truck), annual trucks have a dominating effect on this metric. This tends to prioritize projects based on functional class (Interstate, etc.), NHS status, and Freight and Goods Transportation System (FGTS) Classification (T1, T2, etc.).

#### Life Cycle Cost

As noted previously, each project is vetted to ensure that it is the lowest life cycle cost solution for the given section. However, there may not be funding to apply to all of these solutions. When two sections have similar asset use, sections that have the ability for a lower life cycle cost will be prioritized higher.

Trade-offs between the three investment areas are necessary because a singular prioritization of pavement projects is problematic to meet all performance expectations within available funding. For example, concrete projects may rarely prioritize well compared to asphalt projects. However, because concrete roadways are necessary for high volume or special consideration sections (such as mountain passes), it is necessary to devote some resources to this type of activity.

More recently, the need for a balanced, long-term approach related to concrete pavement preservation resulted in the development of a 30-year concrete preservation plan. This is necessary as concrete preservation is capital intensive, and an unbalanced approach is likely to lead to short time periods requiring significant investment that would be difficult to fund and deliver.

By following these pavement investment strategies and leveraging a strong inventory of pavement asset condition, WSDOT has been able to strategically plan projects that maximize pavement condition within an environment of constrained resources.

### Bridge Prioritization

Bridge preservation investment areas take into consideration the condition and age of bridge components, which are then used to create several 10-year needs lists. These needs are ranked based on condition, age, and traffic levels. WSDOT Regions across the state use these ranked needs to scope and create projects.

Needs lists are grouped by activity and include:

- Replacement or Major Rehabilitation
- Expansion Joints
- Concrete Decks
- Bridge Painting
- Scour
- Miscellaneous Repair
- Moveable Bridge Repair

Chapter 4 of the [Bridge Inspection Manual](#) provides detailed descriptions of bridge elements and how condition states are assigned during the inspection process.

Due to the risk associated with seismic activity within Washington state, seismic needs are identified separately from condition. Both a statewide seismic needs estimate and a subset of these called "seismic lifeline" have been defined. WSDOT is using the seismic retrofit funding identified by the Washington State Legislature to address seismic needs along the seismic lifeline. Additional information may be found within the [Washington State Enhanced Hazard Mitigation Plan](#).

Once the bridge needs have been identified, and the WSDOT regions have scoped the needs into projects, bridge project investments are prioritized based on four major investment areas, which include:

- Bridge Repairs
- Bridge Replacement
- Scour
- Seismic



# Consistency Review – Project List Development

TEIS Capital Projects

File Edit View Bookmarks WebLinks Help

Version Criteria: 3,571 Versions

Mode(s): All

Session(s): All

Limit Versions To: All

Sort Versions By: Date Created

Version Period: Biennial

Current Biennium Source: Version1 Current Biennium: 2019 - 2021

Version 1: 19PLAN01 2019 Delivery Plan  
Created: 7/31/2019 Updated: 8/23/2019 Total Projects: 2,635 Selected Projects: 1,044

Version 2: (None)

Use BIN Masking

Filter By: Program Funding Location Project Grouping Phase/Schedule

Search Projects

Selected Filters:  
Program: P  
SubPgm: P1, P2

Projects Listed: 1,044

Dollars In Thousands Group by Columns

PIN	Project Title	SR	SubPgm	Total	Prior	17 - 19	19 - 21	21 - 23	23 - 25	25 - 27	27 - 29	29 - 31	31 - 33	33 - 35	Future	6-Yr Total	10-Yr Total	16-Yr + Future
450607A	SR 506/Lacamas Creek Bridge Replacement	506	P2	5,217,560	146,030	1,009,225	4,062,305	0	0	0	0	0	0	0	0	4,062,305	4,062,305	4,062,305
100912C	SR 9/Snohomish River Bridge - Painting	009	P2	5,236,252	0	0	0	0	364,602	4,873,650	0	0	0	0	0	364,602	5,236,252	5,236,252
209702X	US 97/South of Blewett Pass - Paving	097	P1	5,253,090	0	1,648,681	3,604,409	0	0	0	0	0	0	0	0	3,604,409	3,604,409	3,604,409
100555U	I-5/SB Stillaguamish River Bridge - Painting	005	P2	5,260,164	0	0	1,539,499	3,720,665	0	0	0	0	0	0	0	5,260,164	5,260,164	5,260,164
190061A	SR 900/Harrington Ave NE to SE 109th St - Pav...	900	P1	5,289,903	0	60,559	0	0	202,418	5,026,926	0	0	0	0	0	202,418	5,229,345	5,229,345
109945A	SR 99/Roy St to N 60th St - Paving	099	P1	5,305,117	225,998	2,059,048	3,020,071	0	0	0	0	0	0	0	0	3,020,071	3,020,071	3,020,071
509013N	I-90/Yakima River Bridge E of Cle Elum WB - D...	090	P2	5,365,593	141,235	3,642,422	1,581,937	0	0	0	0	0	0	0	0	1,581,937	1,581,937	1,581,937
409718P	US 97/Scale House Rd Vic to Ski Lodge Rd Vic...	097	P1	5,379,246	0	0	69,770	5,309,476	0	0	0	0	0	0	0	5,379,246	5,379,246	5,379,246
215301C	SR 153/Methow River Bridges - Rail & Sidewal...	153	P2	5,396,378	0	0	0	0	253,579	823,382	4,319,418	0	0	0	0	253,579	5,396,378	5,396,378
209702P	US 97/South of Tonasket - Paving	097	P1	5,423,778	0	210,093	1,637,490	3,576,195	0	0	0	0	0	0	0	5,213,685	5,213,685	5,213,685
509013O	I-90/Yakima River Bridge W of Ellensburg EB - ...	090	P2	5,425,028	76,769	1,973,191	3,375,067	0	0	0	0	0	0	0	0	3,375,067	3,375,067	3,375,067
109970T	SR 99/Lincoln Way Vic to Evergreen Way - Pavl...	099	P1	5,470,480	0	244,860	0	0	13,095	122,045	5,090,480	0	0	0	0	13,095	5,225,620	5,225,620
441120B	SR 411/Cowlitz River Bridge - Replace Bridge...	411	P2	5,489,711	0	86,624	812,926	4,590,161	0	0	0	0	0	0	0	5,403,087	5,403,087	5,403,087
109024N	I-90/Homer M Hadley Bridge - Replace Anchor...	090	P2	5,541,011	47,780	5,391,130	102,101	0	0	0	0	0	0	0	0	102,101	102,101	102,101
400518A	I-5 NB/1 Mi S of Todd Rd Vic to Weigh Station...	005	P1	5,558,121	0	5,331,241	226,881	0	0	0	0	0	0	0	0	226,881	226,881	226,881
109024S	I-90/Lacey V Murrow Bridge - Anchor Cable Re...	090	P2	5,583,322	0	0	1,093,888	4,489,434	0	0	0	0	0	0	0	5,583,322	5,583,322	5,583,322
602511H	SR 25/Columbia River Crossing Northport - Bri...	025	P2	5,604,100	0	0	0	0	5,476,791	127,309	0	0	0	0	0	5,476,791	5,604,100	5,604,100
100526J	I-5/Northgate Way & Maple Rd Bridges - Seis...	005	P2	5,608,934	0	0	358,385	3,412,115	1,838,433	0	0	0	0	0	0	5,608,934	5,608,934	5,608,934
509016R	I-90/S Cle Elum Rd Bridge EB - Deck Rehabilita...	090	P2	5,614,799	0	21,330	1,758,452	3,835,017	0	0	0	0	0	0	0	5,593,469	5,593,469	5,593,469
300716H	SR 7/SR 706 to S of Mashel Prairie Rd E - Paving	007	P1	5,628,940	0	0	0	0	0	225,306	5,403,634	0	0	0	0	5,628,940	5,628,940	5,628,940
152711S	SR 527/SR 524 Vic to 164th St SE - Paving	527	P1	5,642,980	0	0	0	0	0	103,113	2,239,316	3,300,551	0	0	0	0	2,342,429	5,642,980
509013L	I-90/Yakima River Bridge W of Ellensburg WB - ...	090	P2	5,647,734	100,193	4,220,184	1,327,357	0	0	0	0	0	0	0	0	1,327,357	1,327,357	1,327,357
450826B	SR 508/Milli Creek Bridge - Replace Bridge	508	P2	5,652,653	0	0	0	0	0	160,272	663,738	3,365,502	1,463,141	0	0	0	824,010	5,652,653
152219C	SR 522/North Creek Bridge to SR 9 Vic - Paving	522	P1	5,664,051	0	4,066,199	1,597,852	0	0	0	0	0	0	0	0	1,597,852	1,597,852	1,597,852
300736A	SR 7/Ohop Slough No 2 Bridge - Bridge Repla...	007	P2	5,717,906	0	0	0	0	0	169,958	1,370,048	4,177,900	0	0	0	0	1,540,006	5,717,906
512402L	SR 124/E of Walkley Rd Vic to 1.0 Mile E of Nef...	124	P1	5,722,080	0	0	0	115,757	5,606,323	0	0	0	0	0	0	5,722,080	5,722,080	5,722,080
109047A	I-90/WB Mercer Slough Bridge - Bridge Scour	090	P2	5,730,807	0	0	0	1,004,479	4,726,328	0	0	0	0	0	0	5,730,807	5,730,807	5,730,807
609022B	I-90/SR 261 EB & WB Bridges - Structure Reha...	090	P2	5,745,802	0	0	0	576,576	4,561,161	608,065	0	0	0	0	0	5,137,737	5,745,802	5,745,802
602110B	SR 21/Keller Ferry to Republic - Chip Seal	021	P1	5,775,581	0	0	0	0	0	0	5,775,581	0	0	0	0	0	5,775,581	5,775,581
116715A	SR 167/SB 15th St NW to 84th Ave SE - Paving	167	P1	5,788,958	0	0	0	0	258,562	5,530,396	0	0	0	0	0	258,562	5,788,958	5,788,958
440920D	SR 409/Columbia River Bridge at Puget Island...	409	P2	5,791,652	177,607	3,407,160	2,206,885	0	0	0	0	0	0	0	0	2,206,885	2,206,885	2,206,885
300735A	SR 7/Ohop Slough No 1 Bridge - Bridge Repla...	007	P2	5,852,234	0	0	0	0	0	0	401,834	3,520,202	1,930,198	0	0	0	401,834	5,852,234
310144F	US 101/Hoquiam River-Simpson Ave Bridge - ...	101	P2	5,918,580	0	0	0	382,740	5,535,840	0	0	0	0	0	0	5,918,580	5,918,580	5,918,580
301606E	SR 16/Tacoma Narrows Bridge to Pottery Ave...	016	P1	5,941,240	0	0	0	0	0	202,941	5,738,299	0	0	0	0	0	5,941,240	5,941,240
501211N	US 12/Tieton River W Crossing - Replace Bridge	012	P2	5,999,235	5,991,308	87	7,841	0	0	0	0	0	0	0	0	7,841	7,841	7,841
602110N	SR 21/Keller Ferry Terminal and Pontoon Repla...	021	P2	5,999,645	0	1,855,733	4,143,912	0	0	0	0	0	0	0	0	4,143,912	4,143,912	4,143,912
List Total				5,142,441,032	179,026,909	496,499,727	599,121,260	511,361,942	709,261,916	768,871,007	760,997,279	273,133,495	146,195,035	17,549,460	680,423,000	1,819,745,119	3,349,613,404	4,466,914,300

Clear All Filters

# Consistency Review – Example of Work Activity Crosswalk

Asset Type	FHWA Work Types	WSDOT Improvement Codes	WSDOT Work Activity Title	WSDOT Improvement Code Definition	WSDOT Maintenance Codes	WSDOT Maintenance Code Definition
Bridge	Preservation	R	Steel Bridge Painting	Painting a steel bridge.		
Bridge	Replacement	DS	Bridge Replacement - Structural	Replacement of a bridge that has a structural deficiency in a superstructure or substructure element. If also functionally obsolete use code DS.		
Pavement	Maintenance				1A1	Pavement Patching and Repair
Pavement	Rehabilitation	F	Hot Mix Asphalt (aka ACP) Overlay	Hot mix asphalt applied over an existing HMA. Overlay depths can vary in thickness.		

# Consistency Review – Data Magic (Manipulation...)

#	A	B	C	D	E	F	G	H	I	J	K	L
1	NHS	PMN	Project Title	SR	SubP	Total	Prior	15 - 17	17 - 19	19 - 21	21 - 23	23 - 25
2	NHS	400516H	I-5/SR 432 Interchange - Highmast Luminaire Replacement	005	P2	2,938,300	0	0	0	0	239,104	2,699,196
3	NHS	420513I	I-205/SR 14 Interchange - Illumination Upgrade	205	P2	1,828,740	0	0	150,303	1,678,437	0	0
4	NHS	420515I	I-205/Mill Plain Interchange - High Mast Luminaire Replacem	205	P2	1,114,400	0	0	0	127,946	986,454	0
5	NHS	420516I	I-205/SR 300 Interchange - Highmast Luminaire Replacement	205	P2	3,631,400	0	0	0	0	141,560	2,644,417
6	NHS	100916D	SR 9/Lake Stevens Weigh Station - Illumination Update	009	P3	76,176	0	0	0	76,176	0	0
7	NHS	200208L	US 2/BNSF East Portal Vicinity - Illumination Upgrade	002	P3	246,285	0	0	0	0	22,231	224,054
8	NHS	200208O	US 2/Nasson Creek Rest Area - Illumination Upgrade	002	P3	294,885	0	0	0	0	22,231	272,654
9	NHS	201790J	SR 17/Kimberlin Rd - Upgrade Illumination	017	P3	708,344	0	0	0	0	48,426	659,918
10	0	202003L	SR 20/Old Highway 97 - Illumination Rebuild	020	P3	164,910	0	0	0	0	90,438	74,472
11	0	202400R	SR 24/SR 243 Intersection - Illumination Upgrade	024	P3	197,585	0	0	0	0	22,231	175,454
12	NHS	202804X	SR 28/Quincy Rest Area - Illumination Upgrade	028	P3	312,650	0	0	0	0	130,955	181,695
13	0	202805C	SR 28/20th St at Soap Lake - Illumination Upgrade	028	P3	164,910	0	0	0	0	90,438	74,472
14	NHS	209002L	I-90/Winchester Rest Areas - Illumination Upgrade	090	P3	375,856	0	0	0	0	25,691	350,165
15	NHS	209705O	US 97/SR 17 Intersection - Illumination Upgrade	097	P3	221,985	0	0	0	0	22,231	199,754
16	0	209706A	US 97A/SR 971 Intersection - Illumination Upgrade	097	P3	168,445	0	0	0	0	17,000	151,445
17	NHS	209706B	US 97/SR 150 Intersection - Illumination Upgrade	097	P3	168,445	0	0	0	0	22,497	145,948
18	NHS	209791J	US 97A/S of Chelan - Tunnel Illumination	097	P3	1,488,451	0	0	0	0	0	0
19	0	215500P	SR 155 Grand Coulee Bridge - Upgrade Illumination	155	P3	518,573	0	5,146	199,954	313,473	0	0
20	NHS	400516I	I-5/SR 506 to Rush Road Interchange - Illumination Rebuild	005	P3	1,651,374	0	0	98,549	1,544,439	8,386	0

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	NEXT 12 MONTHS OF PLANNED EXPENDITURES BY ASSET TYPE, FHWA WORK TYPE, IMPROVEMENT CODE, AND IMPROVEMENT DESCRIPTION.													
2														
3														
4	Current Dollars													
5				2017-2019	2019-2021	2021-2023	2023-2025	2025-2027	2027-2029					
6				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
7	Bridge	Preservation	EO SPECIAL BR REPAIR (OTHER)	39,783,799	29,500,872	32,136,825	38,932,423	16,363,693	12,362,961	19,172,957	16,423,018	38,072,982	45,047,596	
8			EX SPECIAL BR REPAIR-EXPAN JOINTS	5,140,548	5,364,064	15,580,169	26,047,629	21,797,720	16,805,256	20,772,406	26,375,690	12,795,132	6,478,640	
9			R STEEL BRIDGE PAINTING	63,128,193	50,922,291	31,514,084	36,602,187	45,202,012	64,417,138	62,966,263	45,821,168	57,028,709	48,379,354	
10			S SEISMIC	4,622,139	9,801,370	13,629,141	14,055,743	15,774,465	18,532,902	38,577,486	36,120,830			
11			Y SCOUR	1,994,964	3,720,195	2,426,277	7,303,066	6,665,767	3,630,143	5,701,719	6,367,940	2,570,935	5,062,315	
12		Rehabilitation	E3 3RD PARTY DAMAGE BRIDGE REPAIR	873,833										
13			EM SPECIAL BR REPAIR (MOVABLE)	3,560,158	3,076,925	12,965,110	3,489,094	8,924,400	7,483,478	9,460,840	5,443,209	4,018,963	3,372,795	
14			V CONCRETE BR DECK-RIGID O-LAY	21,545,076	18,645,517	9,308,291	16,317,993	26,715,418	27,146,678	13,579,661	3,448,948	6,932,323	10,659,013	
15			VA CONCRETE BR DECK-ASPHALT O-LAY	8,720,703	2,248,829	78,681	97,403	53,811	306,607	1,156,083	910,458	153,728		
16			VB CONC BR DK-ASPHLT O-LAY-2ND GEN	2,030,405	1,718,655	3,390,912								
17			VC CONC BR DK-RIGID O-LAY-2ND GEN		0	0	251,078	1,601,241	2,989,346	2,938,841	8,157,402	5,410,269		
18		Replacement	ZS BRIDGE REHAB (STRUCTURAL)	17,652,266	12,581,832	14,948,119	24,996,162	20,245,329	18,940,384	18,633,140	425,244	2,405,148	3,912,020	
19			DO BR REPL - FUNCTIONALLY OBSOLETE	647,287	19,592	174,076	972,792	2,900,119	8,636,375	15,764,966	16,779,583	33,465,360		
20			DS BR REPL - STRUCTURAL	31,046,535	35,932,495	49,394,117	33,044,498	54,276,837	40,710,427	48,319,385	34,869,855	39,161,660	21,030,829	

#	A	B	C	D	E	F	G	H	I	J	K
1	NHS	(All)									
2											
3	Row Labels	Sum of 17 - 19	Sum of 19 - 21	Sum of 21 - 23	Sum of 23 - 25	Sum of 25 - 27	Sum of 27 - 29				
4	P1	\$ 511,356,388	\$ 362,054,594	\$ 417,604,813	\$ 430,326,220	\$ 397,857,969	\$ 186,445,161				
5	P2	\$ 261,489,849	\$ 345,642,812	\$ 379,443,474	\$ 414,957,505	\$ 364,167,130	\$ 278,252,622				
6	Grand Total	\$ 772,846,237	\$ 711,697,406	\$ 797,048,288	\$ 845,283,724	\$ 762,025,100	\$ 464,701,783				
7											
8											
9											
10											
11	NHS	NHS									
12											
13	Row Labels	Sum of 17 - 19	Sum of 19 - 21	Sum of 21 - 23	Sum of 23 - 25	Sum of 25 - 27	Sum of 27 - 29				
14	P1	\$ 396,567,729.40	\$ 285,500,889.39	\$ 307,789,164.74	\$ 345,503,704.95	\$ 315,334,008.28	\$ 165,405,118.10				
15	P2	\$ 198,948,090.09	\$ 295,961,544.13	\$ 329,016,979.81	\$ 339,345,677.86	\$ 249,917,228.48	\$ 187,909,438.45				
16	Grand Total	\$ 595,515,819.49	\$ 581,472,433.46	\$ 636,806,144.55	\$ 684,849,382.81	\$ 565,251,236.76	\$ 353,314,556.55				
17											
18											
19	Spending by Fiscal Year										
20											
21	NHS	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
22	Pavement	\$ 236,617,568	\$ 142,755,445	\$ 142,755,445	\$ 153,894,582	\$ 153,894,582	\$ 172,751,652	\$ 172,751,652	\$ 167,662,019	\$ 167,662,019	\$ 82,702,649
23	Bridge	\$ 139,094,900	\$ 147,980,772	\$ 147,980,772	\$ 164,508,490	\$ 164,508,490	\$ 169,672,839	\$ 169,672,839	\$ 124,968,614	\$ 124,968,614	\$ 93,954,719



# Consistency Review – Planned to Actual Expenditures

State NHS Investment Levels									
Bridge				Bridge					
	Time Frame	July 2018 through June 2019			Time Frame	July 2017 through June 2018			
	(Dollars in '000s)				(Dollars in '000s)				
		Future Planned Expenditures (FY 2019)	Estimated Work Type Allocation %			Historic Planned Expenditures (FY 2018)	Estimated Work Type Allocation %	Actual Expenditures (FY 2018)	Difference
	Work Type				Work Type				
	Maintenance	Not tracked by NHS			Maintenance	Not tracked by NHS		Not tracked by NHS	
	Preservation	79,609	57%		Preservation	21,256	37%	27,331	6,075
	Rehabilitaiton	42,028	30%		Rehabilitaiton	31,147	54%	34,579	3,433
	Replacement	17,457	13%		Replacement	4,952	9%	5,508	556
	Total	139,095			Total	57,354		67,418	10,064
Pavement				Pavement					
	Time Frame	July 2018 through June 2019			Time Frame	July 2017 through June 2018			
	(Dollars in '000s)				(Dollars in '000s)				
		Future Planned Expenditures (FY 2019)	Estimated Work Type Allocation %			Historic Planned Expenditures (FY 2018)	Estimated Work Type Allocation %	Actual Expenditures (FY 2018)	Difference
	Work Type				Work Type				
	Maintenance	Not tracked by NHS			Maintenance	Not tracked by NHS		Not tracked by NHS	
	Preservation	7,888	3%		Preservation	10,077	4%	10,105	27
	Rehabilitaiton	197,134	87%		Rehabilitaiton	124,476	51%	143,969	19,493
	Replacement	21,596	10%		Replacement	35,396	14%	39,424	4,028
	Total	226,618			Total	169,950		193,499	23,548

Note: A translation between WSDOT improvement codes and FHWA work types was necessary to group expenditures.

# Consistency Review – Asset Condition Assessments

Exhibit 7-4: Decision Lens, Pavement Scenario Analysis Results

Scenario	Current Year Dollars in Scenario (in Millions)	4-Year KPIs				10-Year KPIs			
		Interstate % Poor	Non-Interstate NHS % Poor	All Hwys. % Poor	DPL (in Millions)	Interstate % Poor	Non-Interstate NHS % Poor	All Hwys. % Poor	DPL (in Millions)
No Build	\$0	7%	16%	15%	\$1,280	21%	53%	44%	\$5,480
Current	\$1,334	1%	1%	3%	\$479	8%	14%	33%	\$3,420
Minimum	\$1,358	1%	8%	10%	\$840	7%	31%	39%	\$3,780
Current less \$250 M	\$1,148	2%	3%	5%	\$561	10%	20%	34%	\$3,740

Exhibit 7-5: Decision Lens, Bridge Scenario Analysis Results

Scenario	Current Year Dollars in Scenario (in Millions)	Joints (count remaining)	Painters (ft. <sup>2</sup> of bridges remaining)	Decks (ft. <sup>2</sup> remaining)	4-Year KPIs		10-Year KPIs	
					NHS % Poor	DPL (in Millions)	NHS % Poor	DPL (in Millions)
No Build	N/A	621	5,380	14,210	9%	\$1,160	26%	\$2,930
Current	\$1,334	484	2,220	12,850	2%	\$646	15%	\$1,790
Minimum	\$515	621	5,380	10,180	4%	\$919	10%	\$2,470
Current less \$250 M	\$1,084	488	2,620	13,120	2%	\$747	16%	\$2,040

After creating the Decision Lens models and reviewing the results, several key points emerged. Key points include:

1. The current funding is adequate to meet conditions within a four-year period, but not over 10 years.
2. The minimum scenario for Pavements is based on minimizing the Interstate's Poor condition, but the portfolios are not split into Interstate vs. non-Interstate, which would be necessary to truly estimate the minimum cost of just working on the Interstate.
3. There are not enough Pavement projects created to account for all the Interstate Poor condition assumed to deteriorate over the 10-year period.
4. The minimum scenario for Bridges performs better than the current funding distribution when looking at condition. This is because painting and

joint preservation are totally ignored, which will reduce long-term structure life (painting) or cause immediate short-term closures (joints), and allows the work to be focused on decks and repairs related to Poor condition.

Overall, the Scenario Analysis confirmed the Preservation funding gap is large, and WSDOT needs to take action in the near-term to be able to address it. WSDOT has been communicating this funding gap to the Washington State Legislature in both the 2018 and 2019 [State of Transportation](#). As well, it was discussed with the Governor and Legislature during the 2019 budget deliberations. Funding gaps were also key areas of emphasis through the risk workshops. Both bridge and pavement assets ranked funding as a "very high" level risk. More information on identified risks can be found in the "Risk Management" chapter in the TAMP.

WSDOT Asset Management	WSDOT MAP-21 Network-level SOGR Targets	1. % of Interstate NHS Pavements in Good condition. <sup>a</sup>	2. Percent of Interstate Pavement on the NHS in Poor condition. <sup>a</sup>	3. Percent of non-Interstate Pavement on the NHS in Good condition. <sup>a</sup>	4. Percent of non-Interstate Pavement on the NHS in Poor condition. <sup>a</sup>	1. Percent of NHS Bridges classified in Good condition. <sup>a,b</sup>	2. Percent of NHS Bridges classified in Poor condition. <sup>a,b</sup>
		SOGR Targets	SOGR Targets	SOGR Targets	SOGR Targets	SOGR Targets	SOGR Targets
		<u>2-yr</u> <u>4-yr</u>	<u>2-yr</u> <u>4-yr</u>	<u>2-yr</u> <u>4-yr</u>	<u>2-yr</u> <u>4-yr</u>	<u>2-yr</u> <u>4-yr</u>	<u>2-yr</u> <u>4-yr</u>
		N/A   30%	N/A   4%	45%   18%	21%   5%	30%   30%	10%   10%
National Goals & Performance Measures	23 CFR Part 490 National Performance Management Measures	1. % of Interstate NHS Pavements in Good condition. <sup>1,4</sup>	2. % of Interstate NHS Pavements in Poor condition shall not exceed 5%. <sup>1,4</sup>	3. % of non-Interstate NHS Pavements in Good condition. <sup>1,4</sup>	4. % of non-Interstate NHS Pavements in Poor condition. <sup>1,4</sup>	1. % of NHS Bridges in Good condition. <sup>1,5</sup>	2. % of NHS Bridges in Poor condition (structurally deficient) does not exceed 10%. <sup>1,5</sup>

# Consistency Review – Closing Thoughts

- This was WSDOT's first attempt at demonstrating consistency. It is very likely there is room for improvement.
- The annual consistency review timing does not align well with WSDOT's state fiscal year closing. As a result, assumptions were made around timing of the data.
- Local NHS financial information was not available (and will be difficult to obtain for at least the near future).
- Documented assumptions were necessary to communicate what the numbers represent as well as how the data was assembled.
- There will likely be deviations from planned level of spending in the future – we will need to work through how best to capture and communicate why the deviation occurred.
- Full table of work activity crosswalk may be found in [WSDOT's TAMP](#) (Appendix G)

## Thank you

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