



Puget Sound Regional Council

Discussion: Maintenance & Preservation Data



Transportation Technical Advisory Committee
September 12, 2019

Overview of PSRC Maintenance and Preservation Work Program

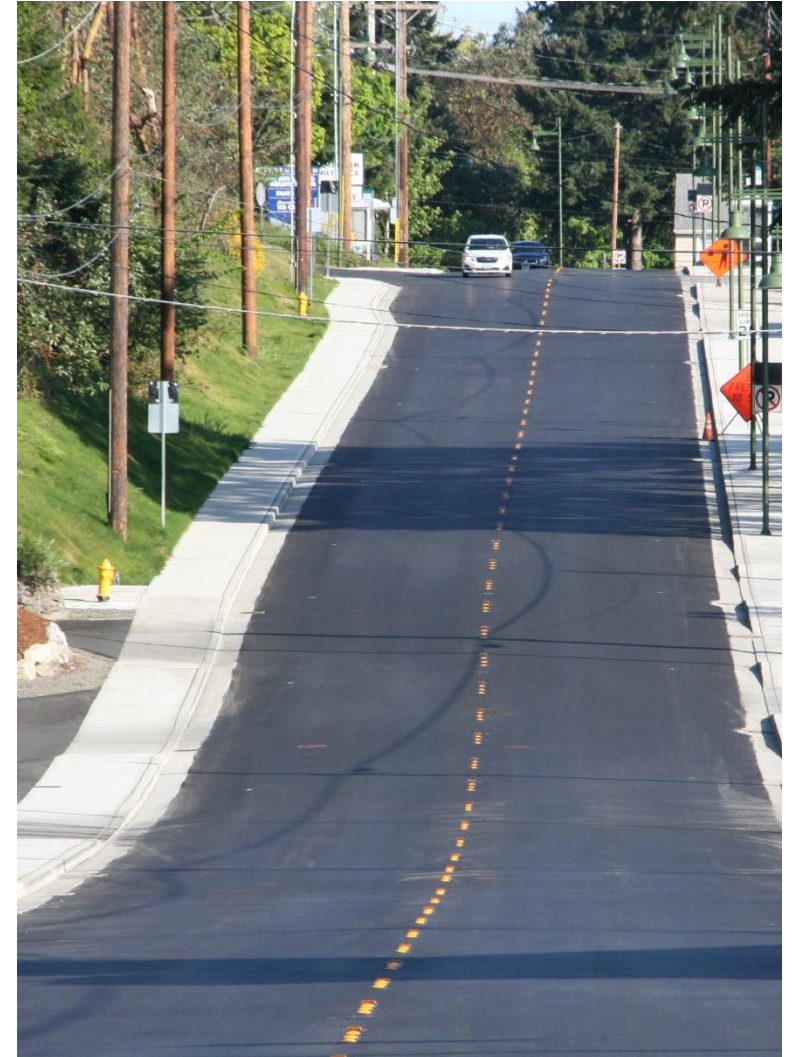


- Regularly collect condition data on certain transportation assets
 - Includes working with partner agencies to meet federal requirements for bridge, pavement, and transit asset target-setting
- Forecast maintenance, preservation, and operational investments for the Regional Transportation Plan Financial Strategy
 - Includes continual refinement of expenditure estimate methodologies for cities and counties, shifting away from extrapolation towards a needs-based approach
- Report to boards on the state of the system/trends, as appropriate

Background on Current Effort



- 2018 RTP included a recommended action on exploring the possibility of a regional asset management program
 - Action included based on discussions with 2018 RTP Maintenance and Preservation Working Group on improving data quality and consistency
- Focus would be on data collection, analysis, and reporting



Preliminary Research



- Preliminary research was conducted to better understand asset management issues, opportunities, and challenges
- **Local Jurisdictions Interviews:** Interviewed 15 jurisdictions to better understand the spectrum of local asset management practices used across the region
- **Peer Review:** Reached out to several peer MPOs to better understand different approaches and applications of regional asset management programs across the country

Local Jurisdiction Interviews: Key Takeaways



- Key takeaways based on interviews conducted with 15 local jurisdictions include:
 - Jurisdictions across the region collect and manage data differently
 - Some jurisdictions are working towards improving how they collect and utilize transportation asset data, but doing this requires significant time and resources
 - Although most do not currently do so, several jurisdictions were open to the possibility of partnerships/coordination on data collection and analysis

MPO Peer Review: Key Takeaways



- Regional approaches to asset management are used in several places (e.g. San Francisco Bay Area, Detroit, Orange County, etc.)
- Key takeaways from MPO discussions:
 - It was easier to begin with a more narrow scope while allowing for capacity to grow
 - Comprehensive and consistent data was an important foundation for these programs
 - Benefits mentioned include more cost-effective local and regional investments, increased funding opportunities, and improved asset conditions
 - Challenges mentioned include differences in available resources and data needs across jurisdictions (i.e. one size does not fit all)

Maintenance & Preservation Data Review



MAINTENANCE AND PRESERVATION DATA REVIEW

STATE ASSETS					
Category	Source	Data Coverage	Condition Data Included?	Collection Interval	Challenges/Notes
Pavement	• WSDOT	Comprehensive	Yes	Annual	
Bridges	• WSDOT	Comprehensive for bridges over 20 feet in length, incomplete for those under	Yes, but only comprehensive for bridges over 20 feet in length	At least every 2 years	• The data for bridges under 20 feet is not comprehensive
Culverts/Fish Passage Barriers	• WSDOT	Comprehensive	Yes	As needed	• There are technical challenges associated with estimating cumulative lineal gain for
Ferries	• WSDOT	Comprehensive	Yes	Annual	

TRANSIT AGENCY ASSETS					
Category	Source	Data Coverage	Condition Data Included?	Collection Interval	Challenges/Notes
Transit Assets	• Transit Agencies	All agencies have submitted targets to NTD in 2019 and TAM plans in 2018	Yes	Annual starting in 2020	• PSRC last received TAM target data in 2017. Currently working with transit agencies on data collection protocols.

CITY AND COUNTY ASSETS					
Category	Source	Data Coverage	Condition Data Included?	Collection Interval	Challenges/Notes
Roadways (Pavement)	• Local Jurisdictions • CRAB • TIB • WSDOT	Incomplete (most arterials and a smaller portion of local roads)	Yes	Inconsistent intervals (varies widely by jurisdiction/agency)	<ul style="list-style-type: none"> • Inconsistent surveying methods, data collection intervals, and data management and reporting practices across jurisdictions for cities with a population over 5,000 • TIB separately collects and reports data for cities with a population under 5,000 • CRAB has reporting requirements for counties, so collection intervals and reporting practices are consistent across counties. However, since each county collects its own data, surveying methods may be inconsistent
Bridges	• WSDOT	Comprehensive for bridges over 20 feet in length, incomplete for those under	Yes, but only comprehensive for bridges over 20 feet in length	At least every 2 years	• Condition data is consistent due to WSDOT oversight; they have reporting requirements for all jurisdictions, conduct field reviews and provide training and technical assistance.
Culverts/Fish Passage Barriers	• WSDOT • State Department of Fish and Wildlife • Local Jurisdictions	Incomplete	Partial	Inconsistent intervals	<ul style="list-style-type: none"> • Data is not comprehensive. WSDOT, Local Jurisdictions, and Department of Fish and Wildlife all have some data but it's incomplete. • 2019-2021 biennial budget allocates \$700K for assessment of locally-owned fish passage barriers
Sidewalks	• Local Jurisdictions	Incomplete	Unknown	Inconsistent intervals	<ul style="list-style-type: none"> • PSRC is currently conducting a survey to better understand the status of regional sidewalk data. • Data on sidewalk condition is unknown
Bicycle Infrastructure	• Local Jurisdictions	Incomplete	Unknown	Inconsistent intervals	<ul style="list-style-type: none"> • PSRC is currently conducting a survey to better understand the status of regional bicycle infrastructure data. • Data on the condition of bicycle infrastructure is unknown aside from existing pavement condition data for bike lanes
ITS/Traffic Operations	• WSDOT • Local Jurisdictions	Comprehensive for signals along the NHS; incomplete for other signals and ITS assets	No	Inconsistent intervals	<ul style="list-style-type: none"> • PSRC is currently in the process of collecting data from jurisdictions for an inventory of traffic signals and ITS assets along the NHS. • Inventory will not capture the physical condition of the traffic signals
Stormwater Facilities	• Local Jurisdictions	Incomplete	No	Inconsistent intervals	• Many jurisdictions have incomplete data on their stormwater facilities. A regional dataset is not currently feasible.

(See Handout)

Maintenance & Preservation Data Summary



- There are incomplete and/or inconsistent datasets
 - There are often gaps in data coverage, information on condition is not always available, and jurisdictions use different methods and intervals for data collection
 - This makes estimating and forecasting need more challenging
- What would more consistent and complete data look like? (Refer to handout)

Pavement Data: Improvement Options



PAVEMENT DATA: IMPROVEMENT OPTIONS

	Current Scenario	Realistic "Better Data" Scenario	Ideal "Perfect Data" Scenario
DATA COLLECTION AND MANAGEMENT	<ul style="list-style-type: none"> Jurisdictions use different methods and collect at different time intervals Jurisdictions use a range of different software programs with varying functionality for data management 	<ul style="list-style-type: none"> Jurisdictions collect data using an array of similar methods within a similar timeframe Data is reported in a way that allows for consistent cataloguing with at least some analytical capabilities Best practices available to jurisdictions to improve asset management program 	<ul style="list-style-type: none"> Jurisdictions collect data using the same method during the same intervals Data is reported in a way that allows for regional consistency with strong analytical capabilities Best practices available to jurisdictions to improve asset management program
COMMUNICATION OF CONDITION AND NEED	<ul style="list-style-type: none"> Challenges in effectively communicating about systemwide conditions Jurisdictions take an individual approach to communicating need and seeking funding opportunities 	<ul style="list-style-type: none"> Can more effectively communicate on systemwide conditions for plans and funding opportunities Local jurisdictions able to coordinate around a consistent message to communicate need and seek funding opportunities 	<ul style="list-style-type: none"> Can more effectively communicate on systemwide conditions for plans and funding opportunities Local jurisdictions able to coordinate around a consistent message to communicate need and seek funding opportunities
ANALYSIS CAPABILITIES	<ul style="list-style-type: none"> Data that does not allow for consistent analysis across jurisdictions Allows only for very limited aggregated analysis Local jurisdiction analysis capabilities dependent on available internal resources 	<ul style="list-style-type: none"> Data that allows for consistent analysis across jurisdictions Data that provides the ability to conduct aggregated, as well as more granular, analyses to identify needs and gaps At a minimum, local jurisdictions can leverage established best practices for data analysis 	<ul style="list-style-type: none"> Data that allows for consistent analysis across jurisdictions Data that provides the ability to conduct aggregated, as well as more granular, analyses to identify needs and gaps Local jurisdictions can leverage established best practices and utilize improved analysis capabilities
COVERAGE	<ul style="list-style-type: none"> Inconsistent coverage across the region for both arterials and local roads 	<ul style="list-style-type: none"> Consistent systemwide database covering at least the arterial network 	<ul style="list-style-type: none"> Consistent systemwide database covering all roads (arterials & local)
ESTIMATES OF FUTURE NEED	<ul style="list-style-type: none"> Regional need is estimated for the Regional Transportation Plan through a combination of data collection and extrapolation. Lack of consistent condition data across jurisdictions impacts the quality of estimates 	<ul style="list-style-type: none"> Streamlined process that allows for more reliable estimates of future need at the local and regional scale 	<ul style="list-style-type: none"> Streamlined process that allows for much more robust and reliable estimates of future need at the local and regional scale

- Why use pavement data as an example?
 - 2018 RTP forecasts pavement to be nearly half of all local maintenance and preservation costs in the region
 - We have a better understanding of the gaps and inconsistencies for pavement compared to other datasets

Committee Discussion



- Would it be valuable to have more consistent and complete transportation asset condition data?
 - What types of improvements would you like to see? (e.g. more consistent data collection methods, additional available resources, etc.)
 - What do you see as the most significant potential challenges?
 - What do you see as the most significant potential benefits?



Gary Simonson

206-971-3276

gsimonson@psrc.org

Pavithra Parthasarathi

206-971-3277

pparthasarathi@psrc.org