



Transportation Asset Management

Benchmark Setting

February 2018

Performance Setting Requirements

- FHWA targets:
 - 4-year Baseline Performance Period (Jan 2018 – Dec 2021)
 - 2-year Mid-Performance Point
 - Pavement and bridge
 - **NHS inventory**
- Commission “benchmarks”:
 - Each year over the 10-year TAMP period.
 - Primary asset classes: pavement, bridge, drainage, TMS
 - **SHS inventory**

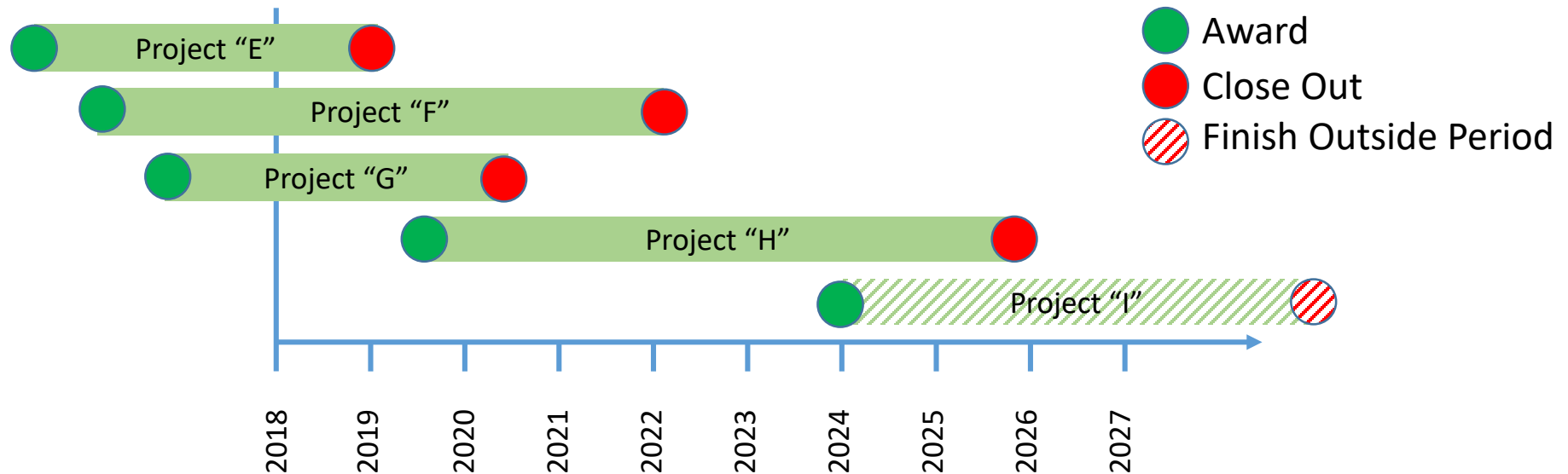


Benchmark Development Procedure

1. Begin analysis from the most recent known condition
 - 2016 Pavement, 2017 Bridge Data, Etc.
2. Reduce condition by the expected deterioration to each time point
 - Apply deterioration year by year for 10 years
3. Improve the condition as appropriate for project accomplishments
 - Reflect SHOPP and HM accomplishments
4. Incorporate new inventory
 - New inventory can improve (TMS) or offset accomplishments (culverts)



Realizing Performance Gains



Project **Accomplishments** require the review of many individual projects spanning approximately 15 years



Estimated Construction Complete by SHOPP Cycle



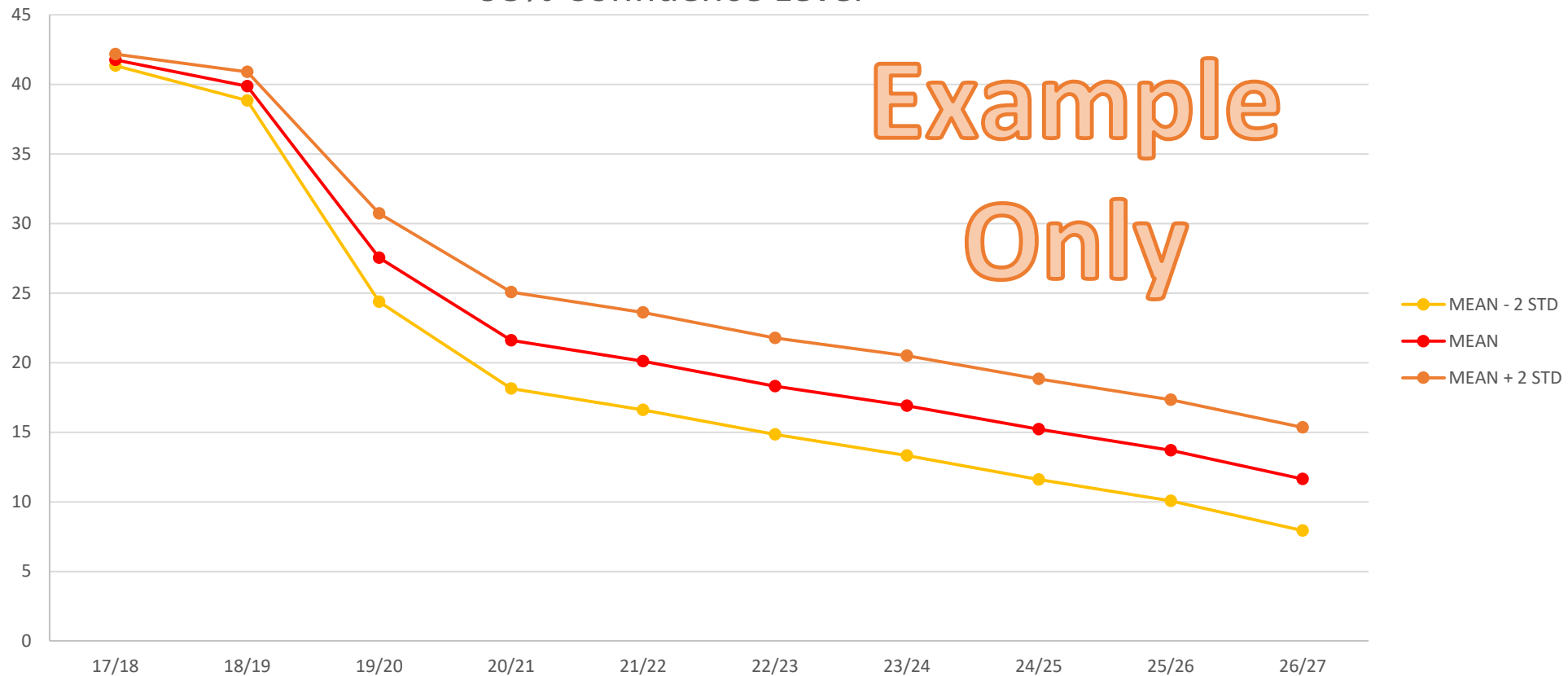
Benchmark Setting Uncertainty

- Projected conditions are influenced by various assumptions made:
 - Inventory
 - Measured Condition
 - Deterioration Rates
 - Project Accomplishments
- Uncertainty will be incorporated using a Monte Carlo simulation



Presentation of Results

Monte Carlo Simulation
95% Confidence Level



Summary

- Benchmark methodology is fairly straight forward
- Outcomes are a function of starting condition, deterioration and project accomplishments
- Uncertainty increases with longer time horizon
- Recommend updates of analysis every two years with SHOPP

