Utah Perspective: Managing a Large Increase in Preservation Funding

Becky Nix, SE
Bridge Management Engineer
Utah Department of Transportation

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Overview

- Historical Funding
- Preservation Programs
- Preservation Prioritization
- Next steps

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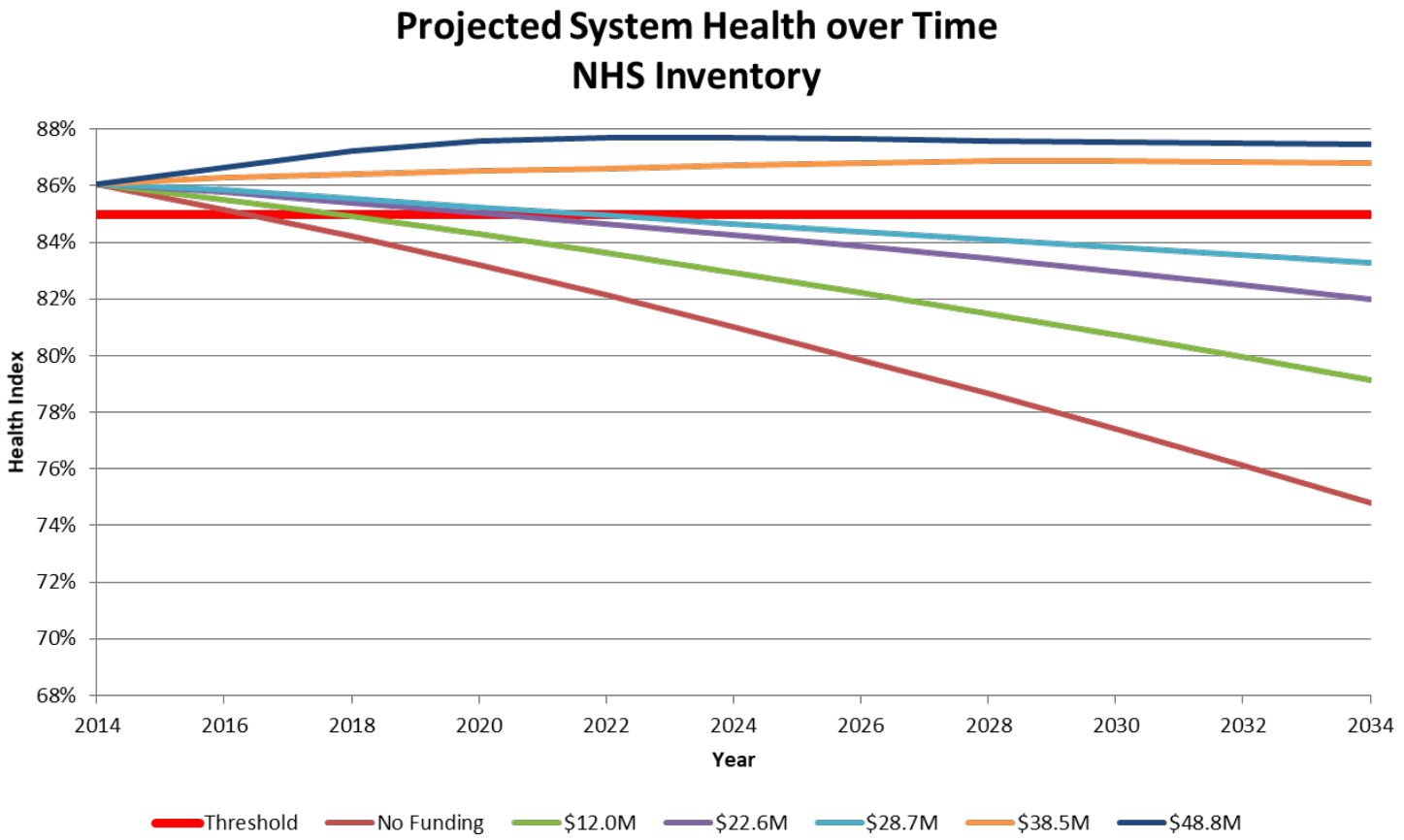
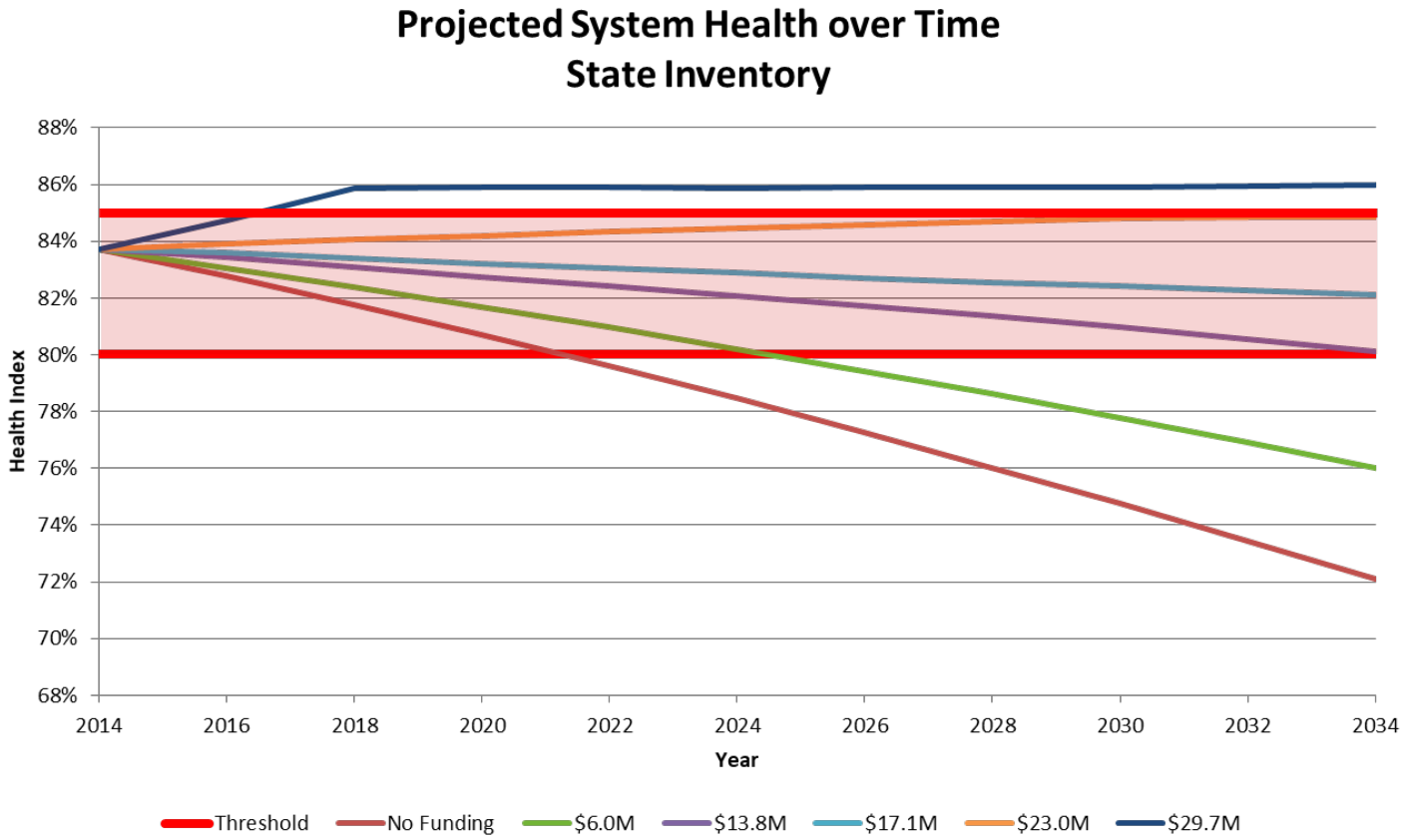
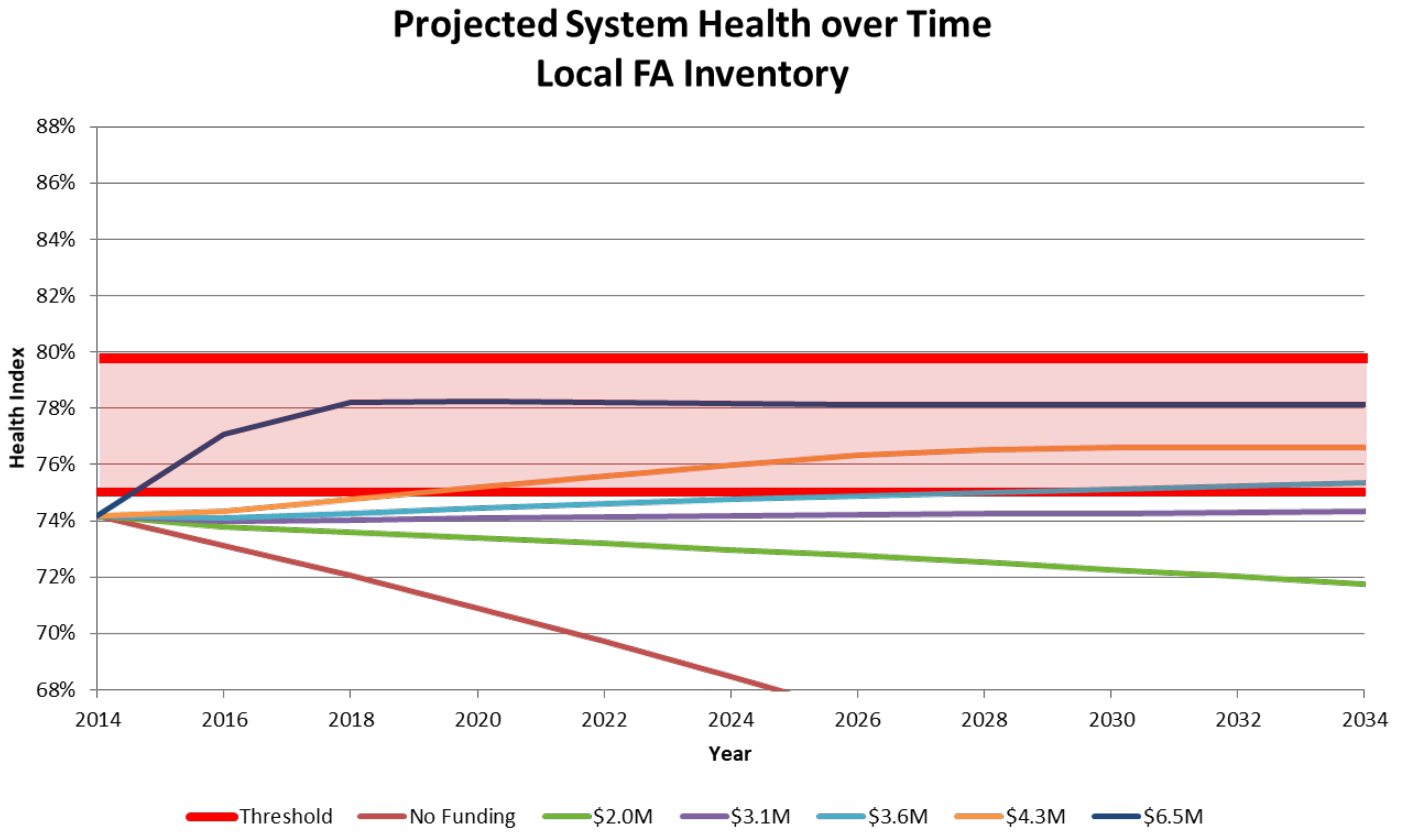
Funding Request



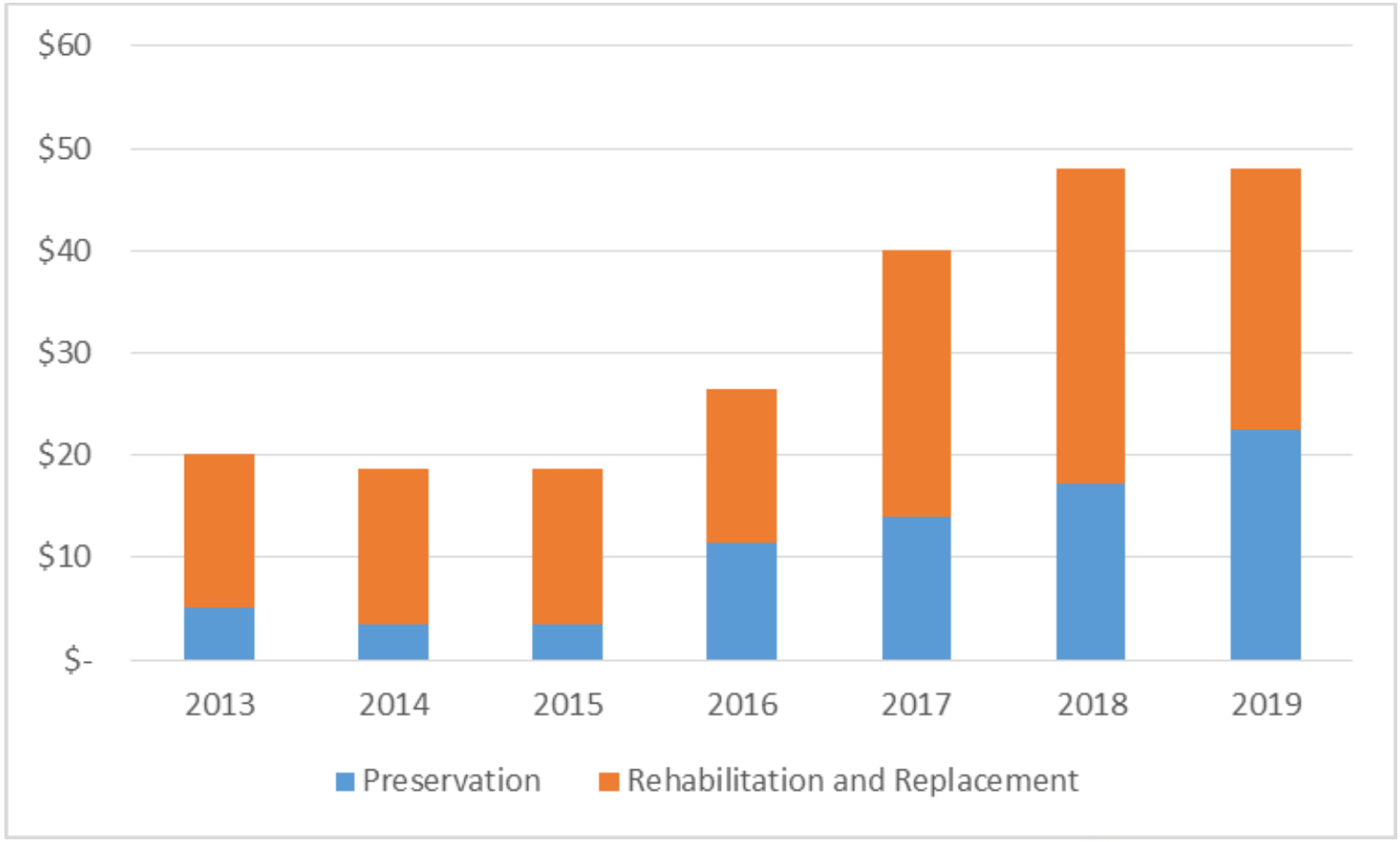
Funding Request



Funding Request



Historic Funding Levels



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Bridge Health Index

$$BHI = (\text{Deck Score} \times 0.40) + (\text{Superstructure Score} \times 0.35) + (\text{Substructure Score} \times 0.25)$$

$$\text{Deck Score} = \frac{\Sigma_d H_d Q_d W_d}{\Sigma_d Q_d W_d}$$

Where:

d	=	index of a deck element
H_d	=	health index of the individual deck element
Q_d	=	total quantity of the deck element d on the bridge
W_d	=	weighting (unit cost value) factor of the element, d

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Element Health Index

$$H_e = \frac{\Sigma_s k_s q_s}{\Sigma_s q_s}$$

Where:

H_e	=	health index of the individual element
s	=	index of the condition state
q_s	=	element quantity in s^{th} state
k_s	=	health index coefficient corresponding to the s^{th} condition state for each element

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Preservation Programs

- Bridge deck overlays
  - Overlay health index
- Structural steel/girder paint
  - Paint health index
- Bridge Maintenance

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Bridge Deck Overlay Prioritization

- Bare concrete decks on high volume routes are highest priority
  - Defect data collection is now being collected to further prioritize bare decks
- Bridges are grouped geographically when possible

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Structural Steel/Girder Paint Prioritization

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Bridge Maintenance Program

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Next Steps – Sustainability Index

- Evaluate total quantities of each bridge deck overlay type
- Validate and update deterioration rates for overlays
- Establish program targets
- Document historical annual work
- Establish program gaps
- Develop cyclical plan

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