## How Risk-Based Asset Management Programs Can Catalyze ERM

Gordon Proctor Shobna Varma



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# ERM Complements Performance

- "Risk is the positive or negative effects of uncertainty or variability upon agency objectives."
- It includes
  - Uncertainty
  - Variability
  - Threats
  - Opportunities

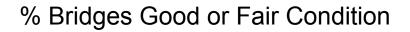


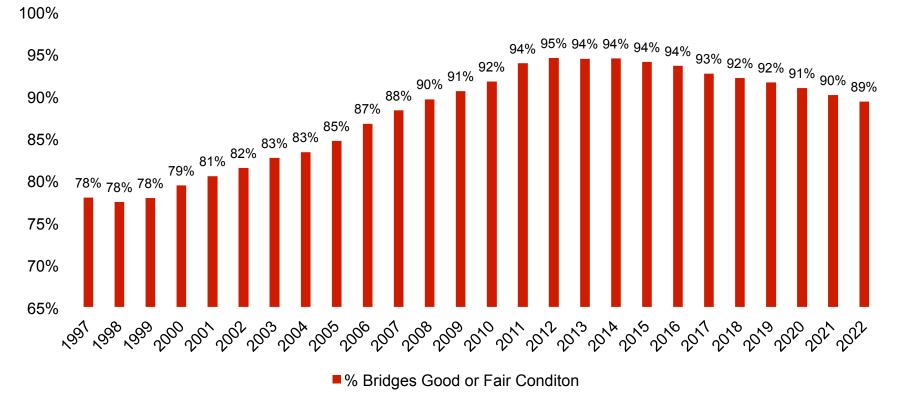
## **Elements of Risk in TAM**

- Asset management plans will include
  - Specific condition targets
  - Long horizons which bring uncertainty about:
    - Revenues
    - Asset performance
    - Model accuracy
    - Traffic loadings
    - Political support



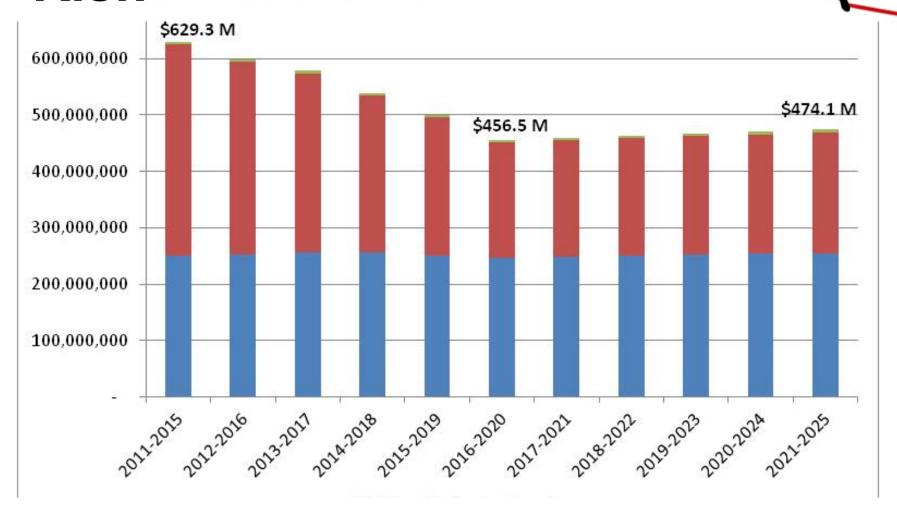
#### **Model Risk**





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## Revenue, Economic Politica Risk



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NCHRP 20-24 (105)

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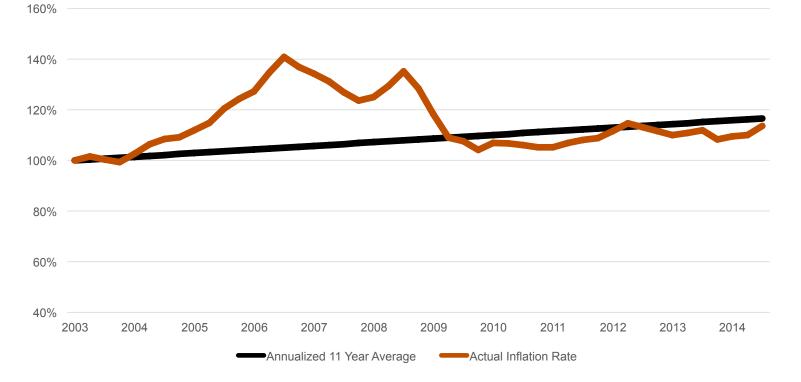
## **Risk-Based Tradeoffs**

- Not all assets are equal
- Risk helps prioritize asset investments
- Agencies often face tradeoffs
- Risk justifies difficult tradeoffs



## **Construction Price Risks**

FHWA Construction Inflation Trends



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