Hillsborough TPO
Transportation
Planning Organization

2050 Plan
Needs Assessment for
Congestion Management and
Crash Mitigation (CMCM)
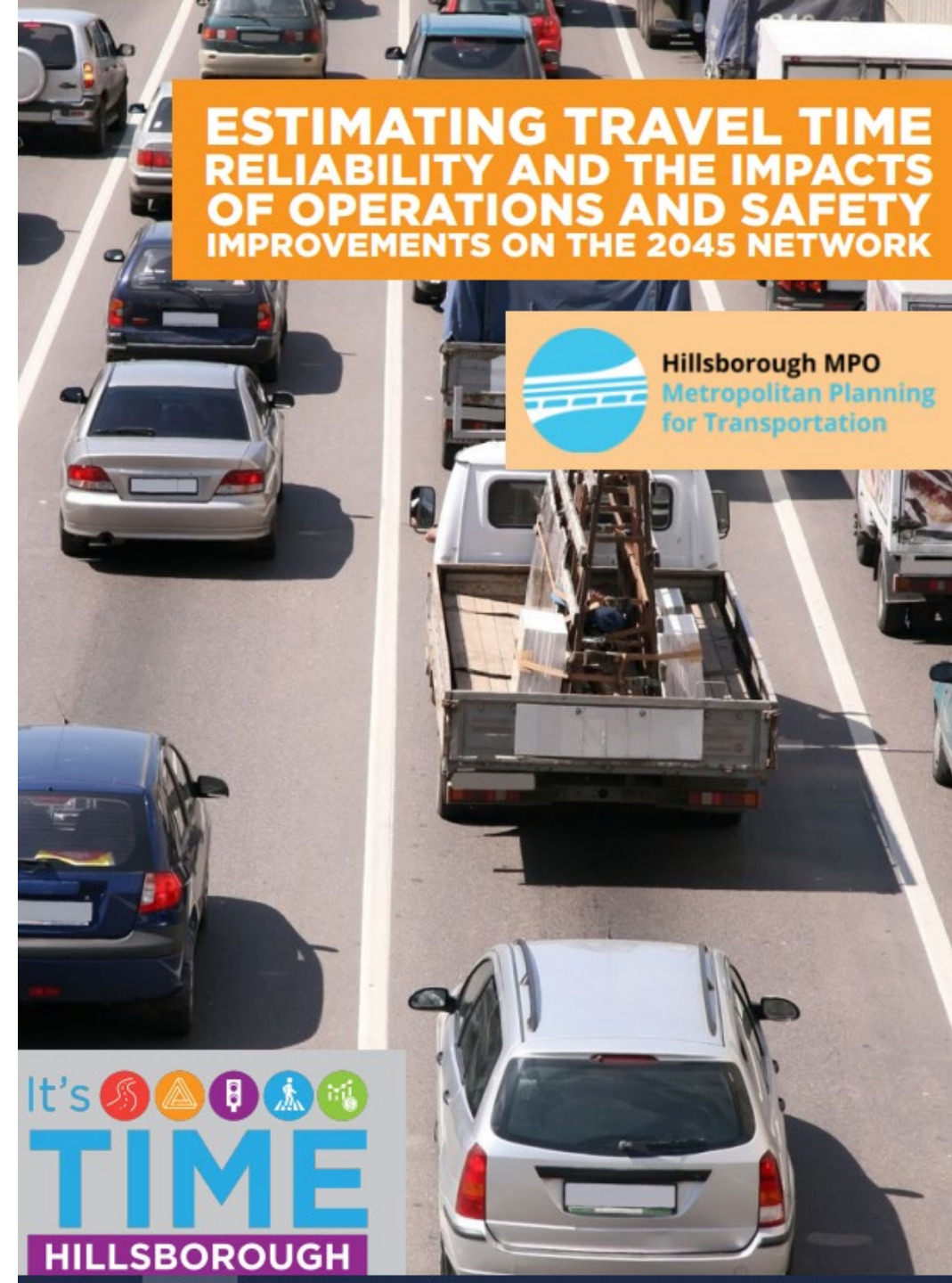
Hillsborough Transportation Planning Organization

Vishaka Shiva Raman, TPO

Purpose of Needs Assessment

- Identifying future safety and reliability deficiencies in the transportation system
  - Inform investment decisions to address future needs
- Forecasting benefits of safety & reliability enhancements to provide cost estimates for desired performance

ESTIMATING TRAVEL TIME RELIABILITY AND THE IMPACTS OF OPERATIONS AND SAFETY IMPROVEMENTS ON THE 2045 NETWORK

Hillsborough MPO
Metropolitan Planning for Transportation

It's TIME
HILLSBOROUGH

Performance Measures

System Performance Measures

Background

- Project C11 tool developed by Federal Highway Administration Second Strategic Highway Research Program (SHRP2) for transportation investment planning

- Sketch planning spreadsheet tool for estimating economic, safety, travel time reliability impacts and costs for individual projects

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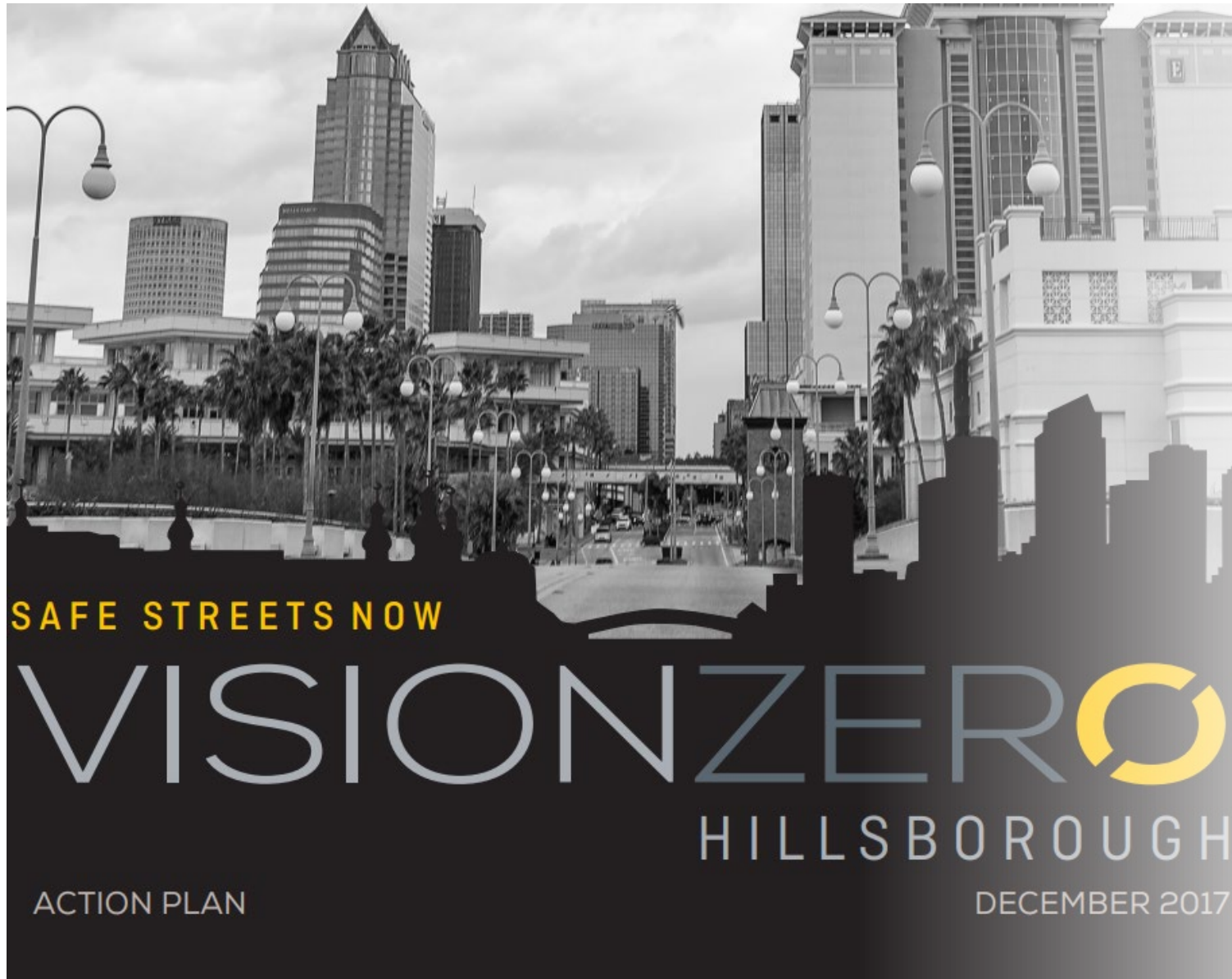
Data selection

- Tampa Bay Regional Planning Model (TBRPM) 2045 Loaded Network output
  - Algorithms developed to forecast crashes, time of delay and travel time reliability
  - Corridors selected from the model, TPO's high injury network, and other priority corridors defined by local government partners

Methodology

- Post-processor reveals poorly performing links
- Links translated into corridors
- Enhancements applied to corridors based on facility type
  - Urban Freeways
  - Divided Arterials
  - Undivided Arterials
  - Other roadways (priority local roads and collectors)
- Scale of enhancements dependent upon revenue forecasts

Methodology

- Calculation of percentage improvement in safety and travel time reliability for each investment scenario
- Project selection based on highest benefit cost ratio for each improvement type and those that can be bundled
- Three types of improvements suggested
  - Low-cost improvements our partners have been implementing
  - Optimal improvements based on highest cost   -benefit ratio
  - Middle value improvements

Tool Structure
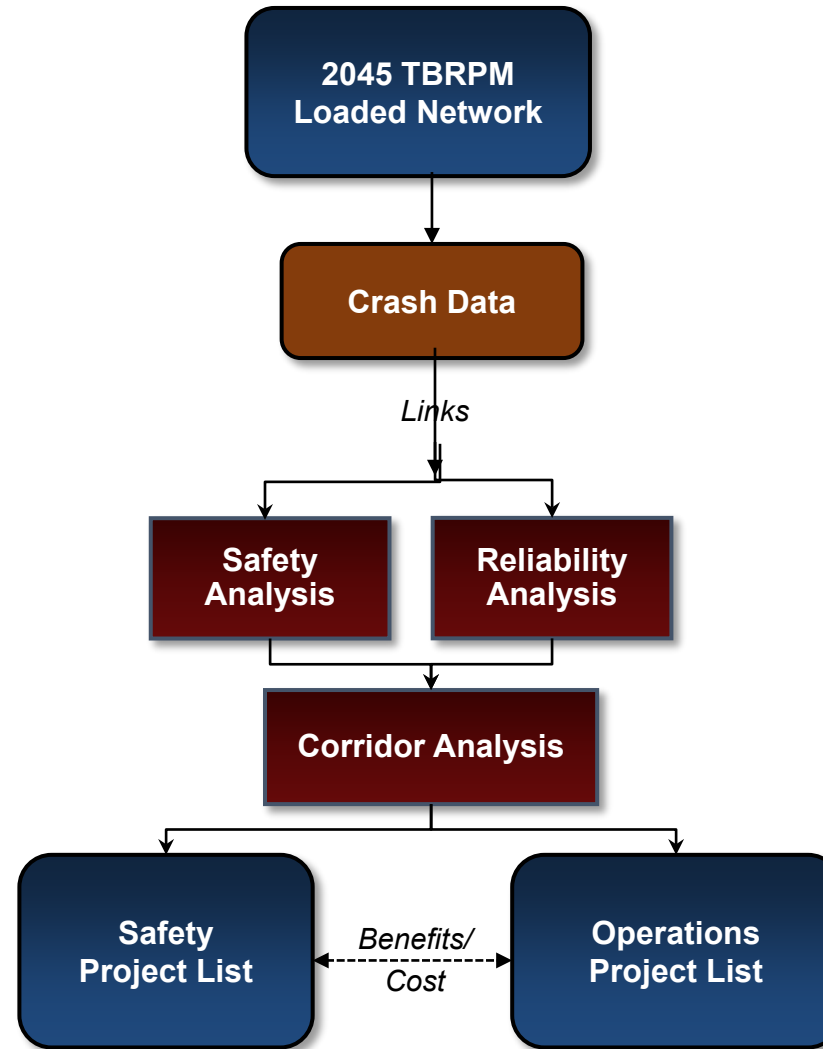
Potential Safety Improvements

- Road Diet
- Complete Streets
- Turn Lanes
- Intersection Channelization
- Bike Lanes
- Lighting
- Pedestrian Crosswalks and Beacons
- Traffic Calming

Potential Operational Improvements

- Ramp Metering
- Part time shoulder use
- Variable speed limits
- CCTV
- Central Signal Control
- Loop Detection
- Signal Retiming
- Incident Management

Next Steps

2023 (Fall)

- 2050 Plan Needs Assessment
  - Congestion Management and Crash Mitigation Tech Memo
  - Revenue Forecast
  - Goods Movement and Truck Route Plan
  - Good Repair & Resilience
  - Real Choices

2024

- 2050 Growth Scenarios
- 2050 Cost Affordable Plan
- 2050 Plan Adoption (Nov 2024)