



Hillsborough TPO
Transportation
Planning Organization

2050 LRTP Needs Assessment for State of Good Repair and Resilience

TPO Intelligent Transportation Systems Committee Meeting

presented to

Hillsborough TPO

presented by

Cambridge Systematics, Inc.

October 5, 2023

Outline

- Scope of Work
 - » Objectives
 - » Work plan
- Preliminary Analyses
 - » Data and Assumptions
 - » Pavement Asset Needs
 - » Bridge Asset Needs
 - » Resilience Needs
- Main Conclusions
- Next Steps
- Q&A

Scope - Objectives

- Perform a State of Good Repair (SGR) and Resilience analysis as part of 2050 LRTP update
 - » Analysis of current and future needs to achieve **SGR** of pavement, bridges, and transit assets
 - » Will assess **resilience** of assets to natural disasters and extreme weather



Cover of the 2045 LRTP Good Repair Needs Assessment

Scope - Work Plan

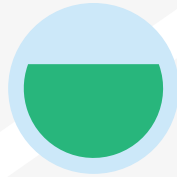


Data Gathering

asset conditions and maintenance programs

Budgets, shortfalls, treatment costs, and 2050 revenue forecasts

Priority resiliency projects



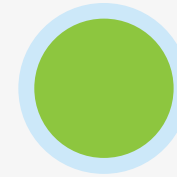
SGR and Resiliency Analysis

Assess collected data, and identify gaps and trends

Estimate performance outcomes based on scenarios

Identify resilience improvement needs

Identify opportunities for incorporating resilience improvements

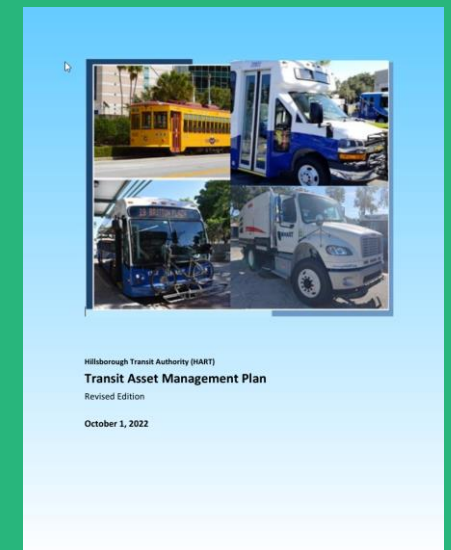


Reporting

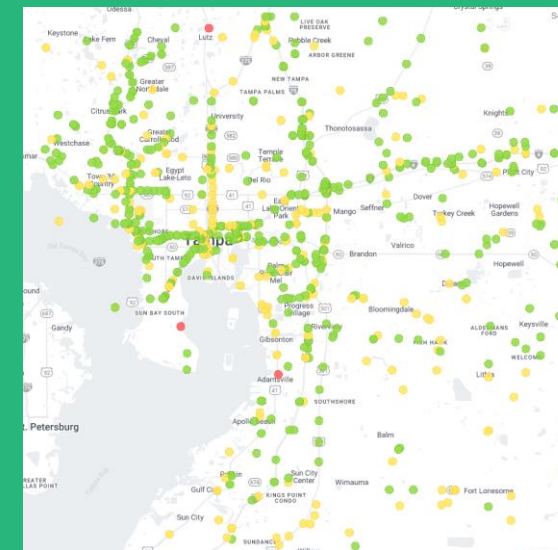
Develop *2050 State of Good Repair and Resiliency Needs Assessment* report and presentations

Data and Assumptions

- We requested data on pavement, bridge, and transit assets from each stakeholder
 - » Including condition, maintenance, costs, and budget information
- When data was not available, we filled gaps with assumptions informed by official documents and external sources, such as
 - » Budget from 2050 LRTP baseline spending, compiled by TPO
 - » Preservation unit costs from 2022 FDOT Transportation Asset Management Plan
 - » Bridge ownership from FHWA LTBP InfoBridge



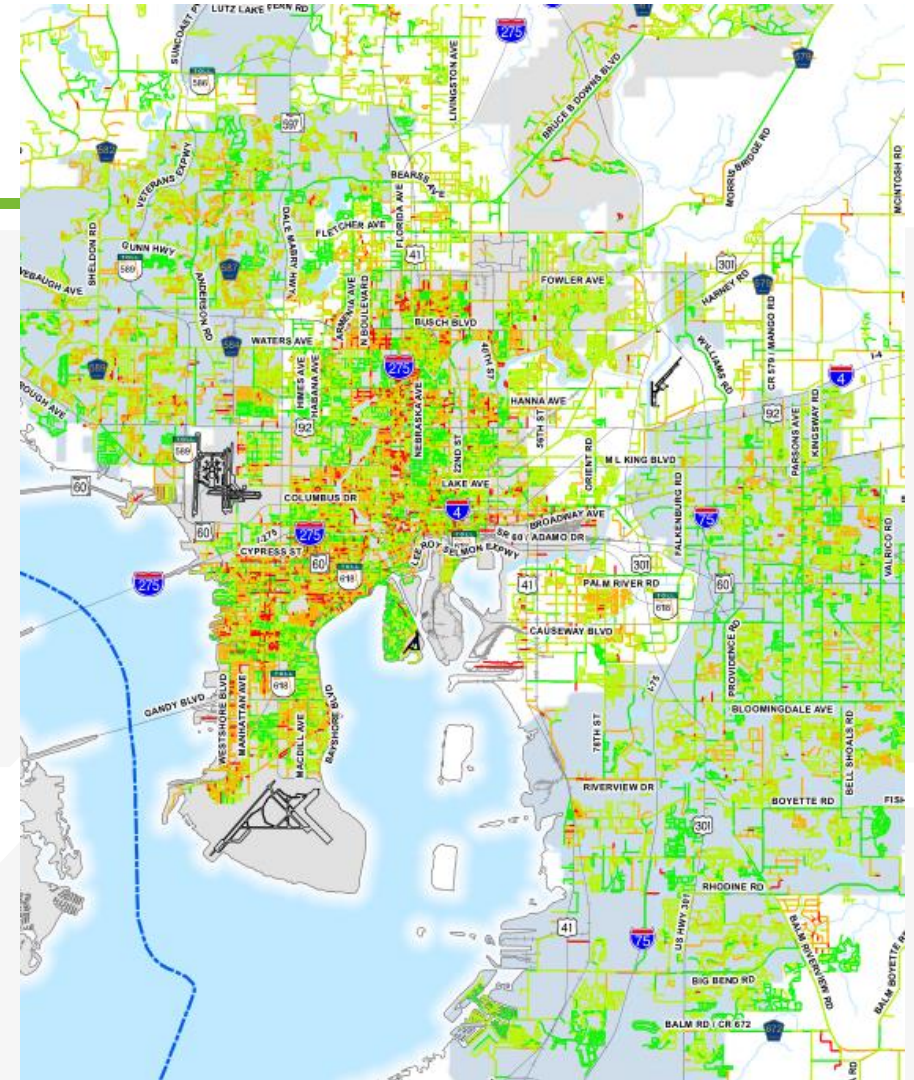
Covers of FDOT's Transportation Asset Management Plan and HART's Transit Asset Management Plan



Map of bridges in Hillsborough County, from FHWA's InfoBridge website

Pavement Asset Needs

- Trend Spending
if existing spending levels continue to 2050
 - » \$137.0M annually for pavement preservation
 - » Funding shortfall results in only **27% of roads achieving goal** to resurface once every 12–20 years
 - » Funding shortfall varies significantly across stakeholders
- Performance Spending
existing spending + additional funding sources
 - » Additional \$87.6M annually will result in **100% of roads achieving goal** to be resurfaced once every 12–20 years
 - » Typical roads would be **resurfaced once every 18 years**



Pavement condition map from Hillsborough County 2021
State of the System



Bridge Asset Needs

- **Trend Spending Level**
if existing spending levels continue to 2050
 - » \$23M annually for bridge preservation
 - » Funding shortfall results in **86% of bridges achieving goal** of rehabilitation every 40 years
 - » Funding shortfall varies significantly across stakeholders
- **Performance Spending Level**
existing spending + additional funding sources
 - » Additional \$3.6M annually will result in **100% of bridges achieving goal** of rehabilitation every 40 years

Resilience Needs

- Trend Spending Level
if existing spending levels continue to 2050
 - » Stormwater
 - Current funding: \$1.6M per year
 - » Road Maintenance
 - Current funding*: \$82.3M per year
- Performance Spending Level
existing spending + additional funding sources
 - » Stormwater Resiliency Improvements:
 - Critical roads that are moderately to highly vulnerable: 71 miles
 - Additional \$14.8M annually for 20 years
 - » Road Resiliency Improvements (*hardening pavement & sub-base, raising profile of road, shoreline preservation*):
 - Critical roads that are moderately to highly vulnerable: 71 miles
 - Additional \$67.4M annually for 20 years

* Local government capital improvement programs & Florida DOT Work Program

Main Conclusions

➤ Pavement and Bridge Asset Needs

- » Overall **current spending levels are insufficient** to maintain pavement and bridges in the Hillsborough region at target preservation cycles
- » **Additional \$91M annually** would achieve goal of all pavement resurfaced every 12–20 years and all bridges rehabilitated every 40 years

➤ Resilience Needs

- » Current spending on stormwater only accounts for **11% of the funding needed to improve stormwater/drainage** on critical roads that are moderately to highly vulnerable
- » **Funding needed** to harden/protect critical roads that are moderately to highly vulnerable **is about 82% of the entire current road maintenance budget**

Next Steps

- Validate assumptions and preliminary results with agencies
- Revise analyses based on validations
- ROI resiliency analyses
- Develop 2050 State of Good Repair and Resiliency Needs Assessment Report

Q&A

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