

Hillsborough County

A Local Agency Perspective



PUBLIC WORKS DEPARTMENT

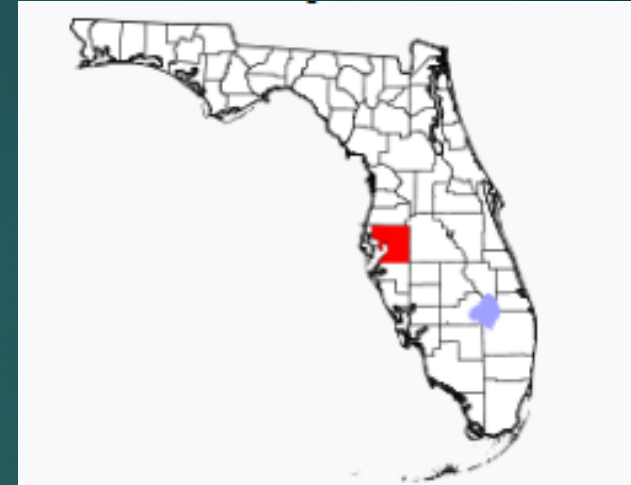
TECHNICAL SERVICES DIVISION

BENJAMIN LOESER, PE



General Information

- ▶ Population: 1.41 million (2017) 4th-most populous county
- ▶ Area: 1,266 sq miles
 - ▶ The unincorporated area comprises 87% of the total land area
 - ▶ City of Tampa, Temple Terrace, and Plant City (13%)
- ▶ In 2012, Hillsborough had the second-largest agricultural output among Florida's counties.
- ▶ Team:
 - ▶ Marcello Tavernari (PE)-Program Manager, Transportation & Engineering Services
 - ▶ Benjamin Loeser (PE)-Bridge Management Engineer
 - ▶ Karl King (CBI), Clifton Griffiths (CBI), Rodney Phillips (EI)

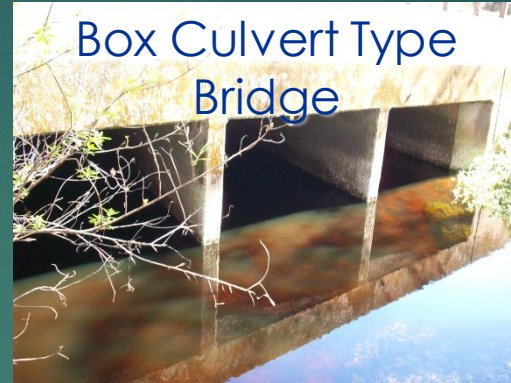


Bridge Inventory

- ▶ NBI Qualifiers (most of any Local Agency in FL)-249
- ▶ Trail Bridges-15
- ▶ Non Qualifiers (small road bridges)-5
- ▶ Pedestrian Bridges-4
- ▶ **Total Bridges- 273**
- ▶ **New projects- Developments, Replacements, Parks Bridges**
- ▶ Carry 1,760,000 vehicles per day
- ▶ Total Replacement Value \$975M
- ▶ Average Replacement Value \$4M

Bridge Type Overview

- ▶ Material Types
 - ▶ Concrete – 95%
 - ▶ Metal – 4%
 - ▶ Timber – <1%
- ▶ Structure
 - ▶ Beam – 51%
 - ▶ Slab – 21%
 - ▶ Culverts – 28%
 - ▶ Movable – <1%



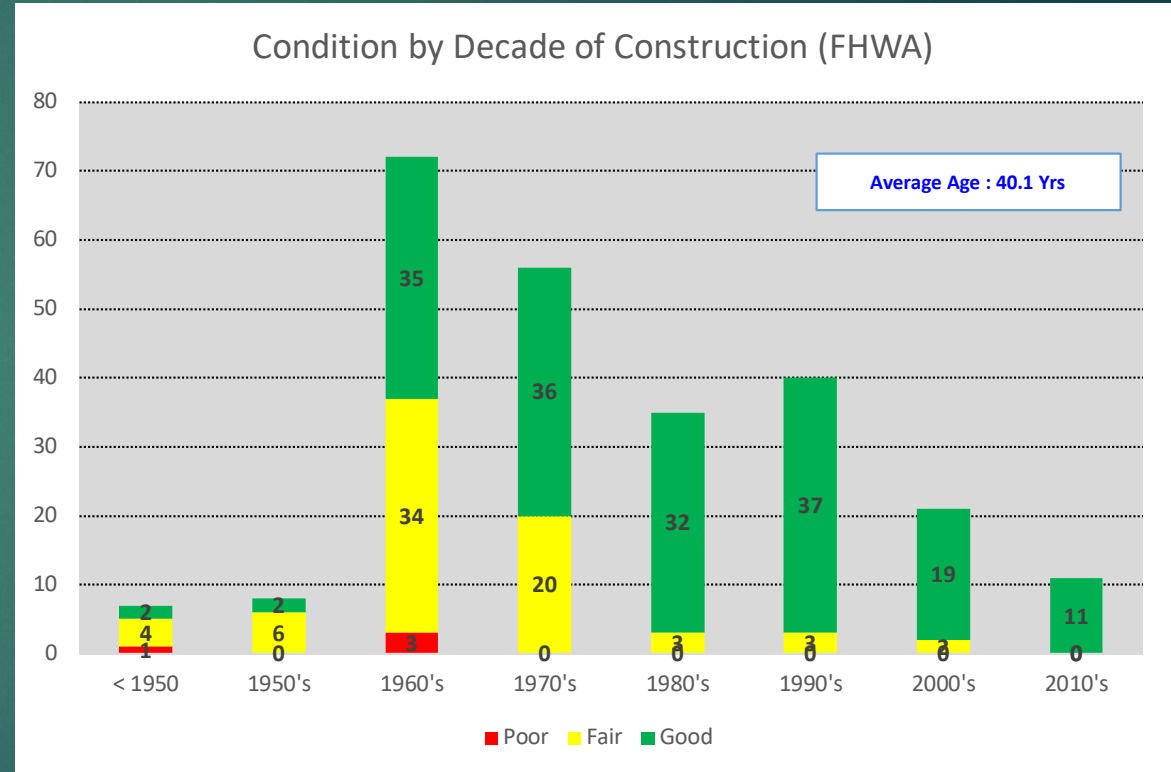
Bridge Condition

(FDOT)	Min. NBI	# Brdgs	%
Excellent	8 to 9	8	3%
Good	6 to 7	220	88%
Fair	5	18	7%
Poor	4 or less	4	2%
	91%	Good / Excellent	

SD / FO Bridge Counts:

SD Brdgs: 5 (2%)

FO Brdgs: 40 (16%)



Funding

POSTED April 19, 2018 | 2:18 PM

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\$800 Million in Road Projects Up for Grabs in Hillsborough County

- ▶ \$800M over 10 years
- ▶ FY 17/18
- ▶ 10 Replacement Projects (\$12M)
- ▶ \$4.4M for Bridge and Guardrail Program

BLOGS / BAY BUZZ

Hillsborough voters approve sales tax hikes for transportation, schools improvements

The 30-year transportation measure will add a penny on the dollar to the sales tax and raise about \$276 million per year. Voters were equally enthusiastic about a 10-year, half-cent sales tax for Hillsborough County Schools.



2.9k



46



16



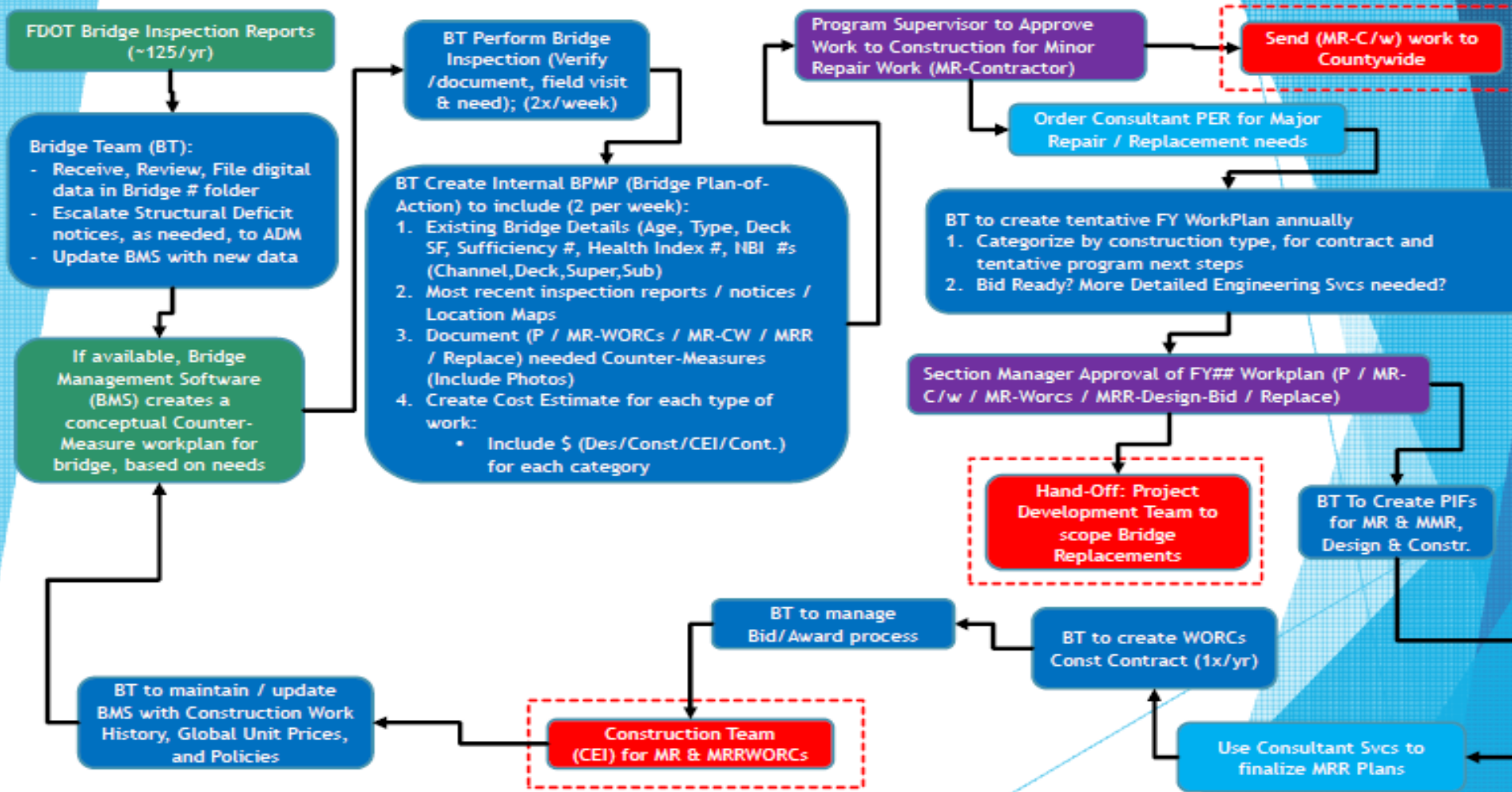
Bridge Management System (BMS)

- ▶ With Such a Large Inventory a productive BMS Needed.
- ▶ Currently using AASHTOware BrM
 - ▶ Local Agency viewer only
 - ▶ No capability to run models, etc.
- ▶ Met with Polk County who is implementing now with Agile Assets.



Bridge Work Program

- ▶ Preliminary Engineering Reports (PER's)
- ▶ Scour PER's
 - Scour Critical
 - Unknown Foundations
- ▶ Guardrail Program
- ▶ Countywide Construction
- ▶ Minor Repair Sub-Program (MR) (WORCs) Annual
- ▶ Major Repair Rehab Sub-Program (MRR) (WORCs/BID)
- ▶ Scour Major Rehab Sub-Program (SMRR)
- ▶ Sub-Program Engineering Reviews
 - Inspection
 - Plan Reviews
 - Miscellaneous Consulting
- ▶ Sub-Program Resurfacing (FY19 - Bridges)
- ▶ Desilting Sub-Program (TMD)



BRIDGE TEAM WORK FLOW

Repair or Replacement?

- ▶ Preliminary Engineering Reports (PER's)

CONSTRUCTION COST ESTIMATE
FOR
HUTCHISON RD OVER ROCKY CREEK
BRIDGE NO. 104205
HILLSBOROUGH COUNTY, FLORIDA

Pay Item Number	Item Description	Estimated Quantity	Unit	ProShot		Areawide Average (2017/02 - 2018/01)		Statewide Average (2017/02 - 2018/01)	
				Unit Price	Total Amount	Unit Price	Total Amount	Unit Price	Total Amount
0104 11	FLOATING TURBIDITY BARRIER	0.00	LF	\$5.00	\$0.00	\$8.56	\$0.00	\$10.41	\$0.00
0107 1	LITTER REMOVAL*	0.00	AC	\$2,500.00	\$0.00	\$5.87	\$0.00	\$16.37	\$0.00
0110 1 1	CLEARING & GRUBBING*	0.00	AC	\$5,907.79	\$0.00	\$5,907.79	\$0.00	\$10,577.60	\$0.00

- ▶ High Repair Costs
- ▶ Current WORCS
- ▶ Statewide Averages

	0.00	EA	\$275.00	\$0.00	\$275.00	\$0.00	\$175.85	\$0.00
WHITE, SOLID, 6"	0.00	GM	\$4,640.72	\$0.00	\$4,640.72	\$0.00	\$4,471.73	\$0.00
YELLOW, SKIP, 6"	0.00	GM	\$5,500.00	\$0.00	\$5,500.00	\$0.00	\$5,500.00	\$0.00

SUB-TOTAL			\$225,785.00		\$224,581.00		\$106,485.00
CONTINGENCIES	10%		\$22,578.50	20%	\$44,916.20	20%	\$21,297.00
MOBILIZATION, 101 1			\$15,000.00	20%	\$44,916.20	20%	\$21,297.00
MOT, 102 1			\$10,000.00	20%	\$44,916.20	20%	\$21,297.00
TOTAL			\$273,363.50		\$359,329.60		\$170,376.00

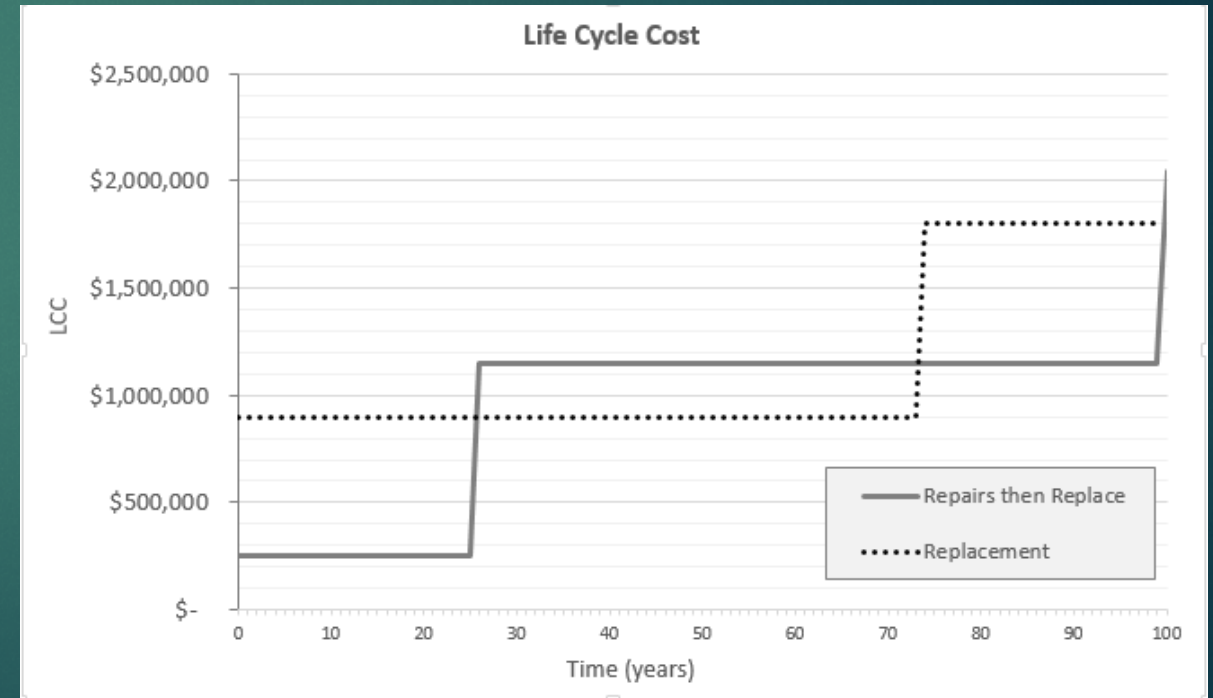
Repair or Replacement?

▶ Preliminary Engineering Reports (PER's)

- ▶ Repair Cost \$275,000
- ▶ Replacement Cost \$433,000
- ▶ Compare LCC for both
 - ▶ Discount Rates
 - ▶ Funding Needs?
 - ▶ Asset Management?

REPLACEMENT COST ESTIMATE
for
HUTCHISON RD OVER ROCKY CREEK
Bridge No. 104205
HILLSBOROUGH COUNTY, FLORIDA
REPLACEMENT IN KIND

Replacement Cost is based on FDOT New Construction (2017 Cost Per SF), Jan 2018 SDG		
Use cost for Concrete Deck/ Pre-stressed Girder - Simple Span (SDG 9.2.3)		\$145.00
Bridge Geometry:		
Bridge Length (ft)		30.84
Bridge Width (ft)		32.20
Deck Area (sf)		994
Bridge Cost		\$144,130.00
Removal of existing structure	@ \$65/ sf (ProShot Estimate)	\$64,610.00
Incidental Items Cost - Appr. Roadway, Guardrail, Etc.	@ 20% of Bridge Cost	\$28,826.00
Construction over water	3% of Bridge Cost	\$4,323.90
Phase Construction	20% of Bridge Cost	\$28,826.00
	Subtotal	\$270,715.90
Mobilization	20%	\$54,143.18
MOT	20%	\$54,143.18
Contingency	20%	\$54,143.18
Total Construction Cost		\$433,145.44
	Average Billing Rate	\$135.00
Design Cost	Design Staff Hours	2,850
	Survey	\$25,000.00
	Geotech	\$20,000.00
	Subtotal	\$429,750.00
CEI Cost	15% @Construction cost	\$64,971.82
TOTAL COST		\$927,867.26



CountyWide Construction

- ▶ Pebble Beach Slope Protection



- ▶ Failed Slope Protection

CountyWide Construction

- ▶ Pebble Beach Slope Protection



- ▶ Ongoing Work

CountyWide Construction

- ▶ Pebble Beach Slope Protection



- ▶ Completed Work

CountyWide Construction

- ▶ LakeShore Drive (Non-Qualifier) Sheetpile Wall Repairs





▶ Beam and Cap Repairs

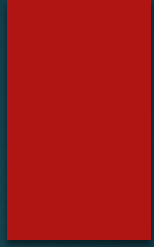




▶ Beam and Cap Repairs



WillSeal Upcoming Repairs



WORCs (Work Order)- Construction

- ▶ 104269 Countryway Blvd- 3 aluminum pipe culverts



WORCs (Work Order)- Construction

- ▶ 104269 Countryway Blvd- 3 aluminum pipe culverts
- ▶ Failing pipe



WORCs (Work Order)- Construction

- ▶ 104269 Countryway Blvd- 3 aluminum pipe culverts
 - ▶ Completed Work



WORCs (Work Order)- Construction

- ▶ 100433 Harney Rd.
- ▶ Completed Work



Challenges moving forward

- ▶ Usage of Technical Maintenance Division
- ▶ Roadway Maintenance Issues
 - ▶ Mowing
 - ▶ Trash
 - ▶ Vegetation
- ▶ Future Funding with BMS

