Florida Transportation Plan Goals

Safety and Security for residents, visitors, businesses

Transportation solutions that support Florida's global **Economic Competitiveness**

Agile, Resilient, and Quality transportation infrastructure Transportation solutions that support Quality Places to live, learn, work, and play

Efficient and Reliable Mobility for people and freight

More Transportation Choices

Transportation solutions that enhance Florida's Environment and Conserve Energy



for people and freight

Imagine 2040 Goal

FTP Goal

Enhance the **Safety** and **Security** of the transportation system for both motorized and non-motorized users. Safety and Security for residents, visitors, businesses

Support Economic Vitality to

foster the global competitiveness, productivity, and efficiency of local and regional businesses. Transportation solutions that support Florida's global **Economic Competitiveness**

Improve the Quality of Life, promote Energy Conservation, and Enhance the Environment,

while minimizing transportation related fuel consumption, air pollution, and greenhouse gas emissions. Transportation solutions that support Quality Places to live, learn, work, and play

Transportation solutions that enhance Florida's Environment and Conserve Energy



Imagine 2040 Goal

FTP Goal

Promote Accessibility and Mobility by increasing and improving multi-modal Transportation Choices, and the connectivity across and between

the connectivity across and between modes, for people and freight.

Efficient and Reliable Mobility

for people and freight

More Transportation Choices

for people and freight

Assure that **Transportation Improvements** coordinate closely with the comprehensive land use plans and support anticipated growth

and development patterns.

Transportation solutions that support Quality Places to live, learn, work, and play

Consider cost effective solutions that **Preserve Existing Facilities** and **Optimize the Efficiency** of *Transportation System Management and Operations.*

Agile, Resilient, and Quality transportation infrastructure



2040 Transportation Plan = Many Kinds of Investments



Preserve Minimize Grow Reduce **Real Choices Traffic for** the **Economic** Crashes & when Not Activity **System Drivers** & Vulnerability Driving **Shippers** Centers

How can performance measures help us target limited resources?





Select the amount to invest, over 20 years, in each program: Low, Medium or High?

You have about \$5,500 M to spend on four transportation programs:



Preserve the System

Reduce Crashes and Vulnerability

Minimize Traffic for Drivers & Shippers

Real Choices When Not Driving

Save some money for Major Projects!



For simplicity, the cost estimates and budget are shown in millions of present-day dollars, for a 20-year period of spending. In each program, the low investment level is based on current spending in our county.

Performance Measures



Preserve the System

- Road resurfacing schedule
- **Bridge repair schedule**
- □ Vehicle replacement schedule



Reduce Crashes & Vulnerability

- □ Total crashes, fatal crashes, and walk/bike crashes
- Economic impact of a major storm



Manage Traffic for Drivers & Shippers

- Peak-hour travel time reliability
- □ Affected truck trips



Real Choices for Non-Drivers

People & jobs served by the bus system and trail/sidepath network

📶 Plan











What can we get if we invest in Minimizing Congestion for Drivers & Shippers?

EXAM	Level 1 – CURRENT SPENDING	 Peak-hour travel time is how much less reliable than today? Hours of truck delay 	Trav How muc 7 Largest Counties in FL	avel Time Reliability: ch longer could it take you at rush hour?		
Τ			 Hillsborough - Arterials 		2.5 x	
E	Level 2 – ATMS FULLY FUNDED	 Travel time % more reliable on major roads Reduced truck "hot spots" by % 	Hillsborough - Freeways	1.5x		2x
	Level 3 – FWY ATMS FUNDED	 Level 2, plus increased reliability on freeways 	0.5 0 2010	2013	Level 1	Level 3

Reliability Prediction: SHRP 2 C11

- Part of a larger FDOT effort to get SHRP 2 analytic products into practice
- Methodology doesn't require much data: sketch planning level
 - AADT, capacity, incident characteristics
- Considers both recurring and incident delay
- Predicts several reliability metrics
 - Planning Time Index used: 95th %ile TT/Ideal TT





Types of Improvements Considered

- Operations
 - Ramp metering
 - incident management
 - DMS
 - variable speed limits
 - HOV-to-HOT
 - hard shoulder running
 - Traffic signal coordination
 - Adaptive signal control
 - Integrated corridor management
 - Different levels of aggressiveness for some strategies (e.g., incident management)
 - Strategies can be bundled





Imagine 2040.org



Types of Improvements Considered (cont.)

- Safety
 - Red light enforcement
 - incident management
 - bike lanes
 - delineation
 - lighting
 - conversion to roundabout
 - parking prohibition
 - pedestrian crosswalks and beacons
 - add raised median
 - road diet
 - add lanes + median to 2-lane
 - add turn lanes
- Plan Hillsboroug
- possibly connected/automated vehicles
- Hillsborough can be bundled





SAFETY1

Q4: Select the amount to invest for Reducing Crashes & Vulnerability

Low \$1,321

- Safety signs, guardrail, minor road fixes, & education reduce crashes 10%
- Highways in low lying areas unusable for 8 weeks after Category 3 hurricane

SAFETY2

- Medium \$1,945
 - Low level, plus sidewalks and street lighting on all major roads, and 900 high-crash intersections get fixes – reducing crashes 20%
 - Interstate highways in low-lying areas are protected from storm surge

SAFETY3

- High \$3,385
 Medium level, plus 900 miles of "Complete Streets" projects (medians, streetscape, traffic calming) reducing crashes 50%
 - Major roads and interstates in low-lying areas are protected from storm surge

Debbie 2012



Hermine 2016



What do we mean by Reducing Vulnerability?





Risk Scenario

– Simulated Category3 storm surge

- Same category, trajectory as 1921
 Tarpon Springs storm
- High tide
- Addition of sea level rise (2040)







Stormwater Infrastructure Programs 2014

Annual Averages

Hillsborough County \$10.2 M (\$3.6 from SW fees)
City of Tampa \$13.5 M (\$6.1 from SW fees)
Temple Terrace \$0.8 M
Plant City \$6.9 M
FDOT District 7 \$9.8 M

Total Cost **\$41.15 M** *"Level 1 Funding"*





Potentially Cost-Feasible With New Funding

- Harden 78 lane-miles of Interstates \$37 M
- Harden 178 lane-miles of other arterials \$97 M

"Harden" means improve stormwater drainage systems, strengthen road base, raise road profile, and protect shorelines from waves using vegetation or structures. Annualized over 20 years = \$8 M per year +/- (\$2014)

"Level 3 Funding"





Weeks of Disruption in Network, Post-Event

"Base Case" Investment Scenario Narrative

Coastal Interstates, particularly Bay crossings, suffer washouts at approaches and experience minor structural damage, yielding the equivalent of 2 weeks of capacity loss (includes debris removal and inspections). Washouts and erosion on coastal arterials are prevalent, a substantial portion of saturated roadway base requires replacement, and some bridges experience severe scouring and approach washouts, yielding the equivalent of 4 weeks of capacity loss. Local facilities experience similar, but more prevalent impacts and are generally designated for repair and clearance last, yielding the equivalent of 8 weeks of capacity loss.



What can we get if we invest in Reduced Vulnerability?

Investment Level 1 – \$823 M (current spending x 20 years)

Routine drainage improvements

Up to 8 weeks of road network disruption with sample Cat 3 storm

Resulting economic loss: \$477 M

Investment Level 2 - \$1,025 M

Focus on interstates: drainage improvements, shoreline armoring, wave attenuation

Up to 6 weeks of road network disruption with sample Cat 3 storm

□ Resulting economic loss: \$259 M or \$218 M Savings

Investment Level 3 – \$1,159 M

Interstates & arterials: drainage improvements, shoreline armoring, wave attenuation

□ 3 weeks of road network disruption with sample Cat 3 storm

□ Resulting economic loss: \$225 M or **\$252 M Savings**



Spending Level Preferences, On-line

Includes spending on both programs & projects over 20 years



Financial Scenario 1 (Baseline) -Existing revenues & spending patterns

- Most programs at Level 1
- US Hwys funded with State Other
 Arterials Program -\$465m
- Major roads in
 Tampa funded with
 Tampa CIT revenues
 thru 2026 \$40m





Financial Scenario One (Baseline) Performance



Level 1 Roads repaved every 50 years on average Level 2 ½ Aging bridges replaced on time, buses every 16 years

Reduce Crashes & Vulnerability

Continue today's programs: crashes drop 10% Low-lying major roads unusable up to 8 weeks after a Cat. 3 stor



Minimize Traffic for Drivers & Shippers

Intersections work 10% better Continue today's truck "quick fix" program





Level 1

Level 1

Level 1

Level 1

Real Choices when Not Driving

Add 140 miles of trails & sidepaths by 2040 Frequent bus service for 16% of people & jobs, somewhat frequent service (every ½-hour) for 45%

Financial Scenario 8a

1 Ct. Sales Tax

 Can increase most programs to Level 3 and afford some highway capacity and fixed transit projects





Scenario 8a (One-Cent Sales Tax) Performance

Preserve the System

Roads repaved every 17 years on average, meeting standardsAging bridges and buses replaced on time

Reduce Crashes & Vulnerability



Level 3

Level 3

Complete streets & intersection projects: crashes drop 21-50% Low-lying major roads unusable up to 6 weeks after a Cat. 3 storr

Minimize Traffic for Drivers & Shippers





Intersections work 17% better, and freeways 10% better

Two new RR overpasses remove 10-hour daily road blockage



Real Choices when Not Driving

Add 240 miles of trails & sidepaths by 2040

Frequent bus service for almost half of people & jobs, somewhat frequent service (every ½-hour) for almost two-thirds

"Adopt Vision Zero in Tampa!"

ONE DEATH ON OUR CITY STREETS IS TOO MANY.

"A <u>completely</u> different way of looking at transportation"



Does Vision Zero Make Sense Here?

In America:10.2 deaths per 100,000 peopleIn Florida:12.5 deaths per 100,000 people

In Hillsborough County: 12.7 deaths per 100,000 on average over last five years.

That means, in 2014, **33 more people died** in our county than if we had an "average" American safety record.

US DOT Fatality Analysis Reporting System, 2014 data

What's the Problem?

Over Half of our "Severe Injury" and "Fatal" Crashes are occurring along **Urban Major Roadways**



Pedestrian Crash Problem Areas

Crossing major roads, both at signals and away from signals, especially:

- Along 6-lane roads
- Along transit routes
- In lower-income areas
- At night



Hillsborough Pedestrian
 Safety Action Plan,
 FDOT, 2015

Pedestrian Death Rates in High-Poverty Tracts Governing magazine, 2008-2012 data

An example

Busch & 40th St

- Tourists
- USF students
- Stores & employers
- Popular bus route
- Neighborhoods along both sides, connecting streets
- Nine lanes to cross on Busch at this intersection
- Posted speed limits: 45 mph
- Distance to⁰next signal-protected crosswalk: .6 mi



Common theme throughout Vision Zero Plans: Speed



Speed affects left-turn & angle crash survival too!

Hey, wait-isn't traffic slow enough already?

5% of our major roads account for 40% of our pedestrian crashes



Reducing speeds in a handful of areas could make a life & death difference

"Complete Street" Treatments

- Repurpose existing ROW on major roads
- Separate faster through-traffic from local traffic
- Calm speeding
- Reduce exposure for walkers and left-turns



Octavia Blvd

- Four through-lanes
- Two local lanes with on-street parking & "sharrows"
- Three medians with trees; shorter crosswalks

Busch Blvd Collaboration Example

FDOT Resurfacing + City of Tampa + MPO Enhancements Program

- Fix major sidewalk gaps
- Ped countdown signals
- Hi-visibility crosswalks, local streets
- Decorative crosswalks, major streets
- ADA curb ramps at all crossings
- Landscaping, including irrigation





FDOT Safety Grant + Hillsborough Co. Resurfacing + MPO Surface Transp. Priority

- New mid-block crossings with RRFB
- Fix sidewalk gaps, ADA curb ramps
- High-visibility crosswalks
- Posted speed reduction, lane narrowing, new bike lanes
- Xeriscaping: median obstacle

Fletcher Ave Collaboration Example



Intersection Spot-Treatment Collaboration



FDOT Safety Program + NHTSA Grant for Education & Enforcement

- \$2m Design/Build Push Button contract
- Intersections selected based on corridor pedestrian crash history
- Approximately 400 signalized intersections
- Targeted enforcement at select intersections

Both Drivers and Pedestrians

□ Extend "Stop & Look" pedestrian education

Tampa Walk-Bike Implementation

MPO Planning Program

+ Tampa traffic calming, sidewalk &

3R programs

- Field reviews to identify feasible low-cost treatments
- All of the above treatments on the table



George Road Complete Street Feasibility Study

Hillsborough MPO, 2016

- Install bike lanes between Memorial Highway and Independence Parkway.
- Crosswalks restriped with high emphasis markings
- Sidewalks gap fill-in, meet ADA compliance standards.
- Retrofit midblock crossing to a high emphasis crosswalk with RRFB and landscaping
- Retrofit painted medians to raised medians with landscaping
- Install 800 feet new sidewalk, south side of Independence Parkway, east of George Road
- Install paved shoulders and stripe for bike lanes south of Independence Parkway
- New path via Dana Shores Drive to connect with the Upath. Existing park gates may need to be moved
- Install bollards to internal pathway connecting at the parking lot
- Signal upgrades to allow detection of bicyclists. Signals should have full pedestrian detection features and count down timers
- Resurface roadway pavement
- Install speed pillows









George Road Complete Street
Health Impacts



 The National Research Council defines Health Impact Assessment (HIA) as "a systematic process that uses an array of data sources and analytic methods, and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population. HIA provides recommendations on monitoring and managing those effects."

WR1



WR1 Wade Reynolds, 2/29/2016

Health Impact Assessment Steps.....





Hillsborough MPO Metropolitan Plannir for Transportation

Outcome: Chronic Disease (Adults, Hills. Cty.)

Health Indicator	Florida (%)	Hillsborough (%)	White (Non-Hispanic) (%)	Black (Non-Hispanic) (%)	Hispanic (%)	
Diabetes	11.2	12.4	10.0	13.7	17.6	
Overweight	13.5	15.1	12.3	17.1	21.2	
Obese	36.4	38.2	38.1	45.4	35.8	
Adults Ever Told Had Heart Disease, Heart Attack, Stroke	10.3	10.5	12.1	10.1	8.7	
Adults Ever Told Had Arthritis	26.0	22.8	29.0	17.0	16.4	

- 40,000 residents near George Rd
- 45% Hispanic

