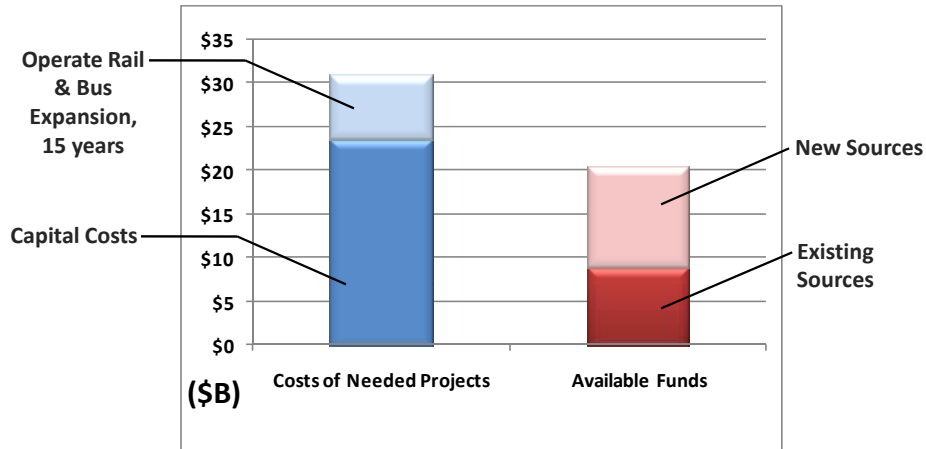




2035 Plan Post-Referendum Analysis

The Plan is required to be affordable using reasonably anticipated funds.



Note: Costs shown are not inflated to year of expenditure.

2



2035 Plan Post-Referendum Analysis

What are today's options for an Affordable Plan?

Research and analysis protocol includes:

- **Cost Reduction Strategies** – revisit the public transit needs assessment and look for opportunities to serve travel markets with less expensive systems
- **Revenue Source Options** – estimate the revenue generating potential of alternative sources and public private partnerships
- **Public Opinion Research** – better understand the priorities of typical voters in areas all around the county
- **Interagency Working Group** – provide a forum for all affected agencies to review the research methods & results

3



Cost Reduction Strategies



Transit Technology Options

Light Rail Transit
(LRT)



Streetcar



Bus Rapid Transit
(BRT)



Commuter
Rail



Diesel
Multiple Unit





Technology Cost Comparisons

Preliminary Cost Ranges

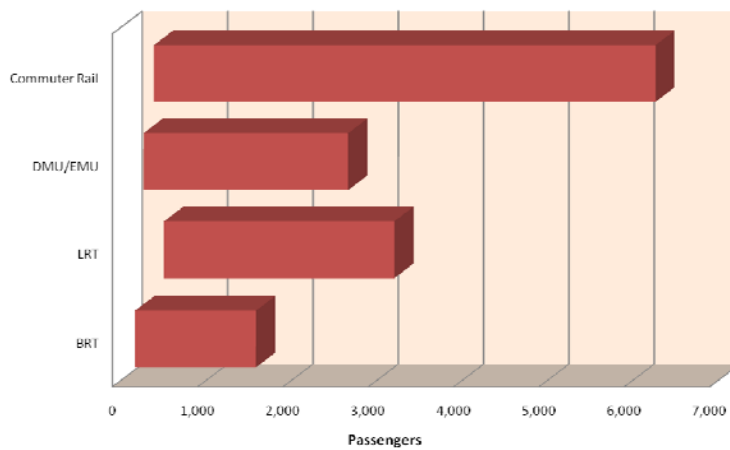
- **Per Mile Capital Costs (2011 \$millions)**
 - Light Rail \$38-\$96
 - Modern Street Car \$36-\$122
 - Bus Rapid Transit \$5 -\$15
 - Commuter \$16-\$52
 - Diesel Multiple Unit \$16- \$96

6



Typical Operating Characteristics

Peak Hour Capacity Range by Transit Technology

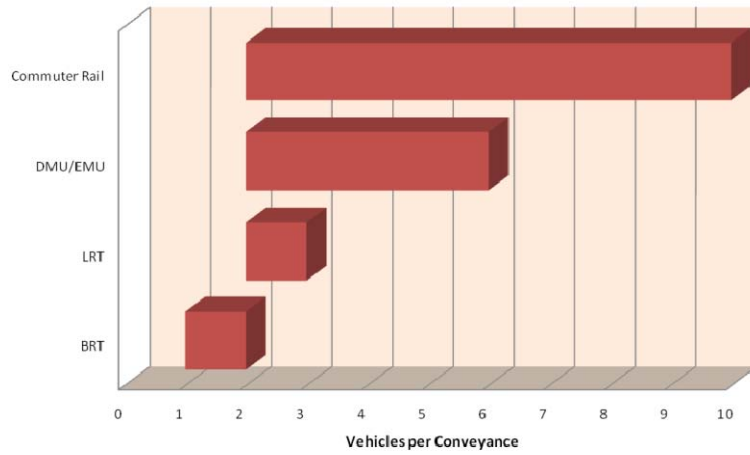


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Typical Operating Characteristics

Vehicles per Conveyance Range by Transit Technology

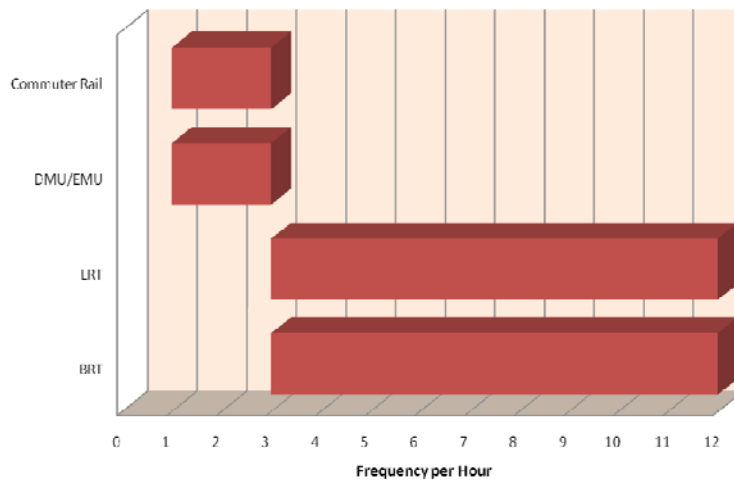


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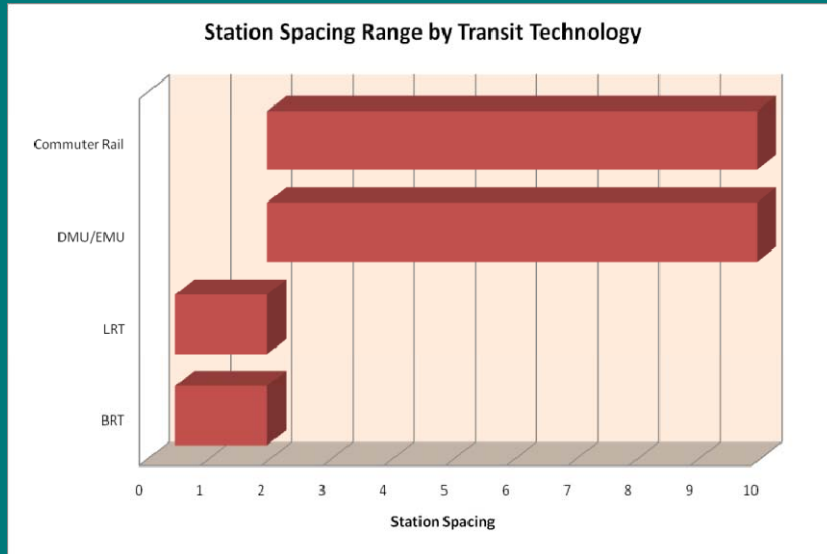
Typical Operating Characteristics

Service Frequency per Hour by Technology



9

Typical Operating Characteristics



Hillsborough Transit Corridors





Broad-Brush Capital Costs

(2011 dollars in millions)

	Miles	Light Rail	Modern Streetcar	Bus Rapid Transit	Commuter Rail	DMU
Per Mile Capital Cost Ranges by Technology						
		\$38 - \$96	\$36 -122	\$5 - \$15	\$16 - \$52	\$16 -96
Capital Cost Ranges by Corridor						
Brandon to Downtown Tampa	9.2	\$350 - \$883	\$331 - \$1122	\$46 - \$138	\$147 - \$478	\$147 - \$883
Busch Blvd/Linebaugh Ave Corridor East	5.3	\$201 - \$509	\$191 - \$647	\$27 - \$80	\$85 - \$276	\$85 - \$509
Busch Blvd/Linebaugh Ave Corridor West	2.5	\$95 - \$240	\$90 - \$305	\$13 - \$38	\$40 - \$130	\$40 - \$204
Carrollwood Village to Tampa International Airport*	5.2	\$198 - \$499	\$187 - \$634	\$26 - \$78	\$83 - \$270	\$83 - \$499
Downtown Tampa to South Tampa	3.8	\$144 - \$365	\$137 - \$464	\$19 - \$57	\$61 - \$198	\$61 - \$365
Downtown Tampa to USF	13.8	\$524 - \$1325	\$497 - \$1684	\$69 - \$207	\$221 - \$718	\$221-\$1325
USF to Wesley Chapel	9.0	\$342 - \$864	\$324 - \$1098	\$45 - \$135	Track not available in corridor.	
Westshore Business District to Pinellas County	2.3	\$87 - \$221	\$83 - \$281	\$12 - \$35		



Broad-Brush Op. & Maint. Costs

(2011 dollars in millions)

	Miles	Light Rail	Modern Streetcar	Bus Rapid Transit	Commuter Rail	DMU
Brandon to Downtown Tampa	9.2	\$11 - \$16	\$10 - \$14	\$4 - \$7	\$34 - \$63	\$27 - \$51
Busch Blvd/Linebaugh Ave Corridor East	5.3	\$4 - \$6	\$4 - \$6	\$2 - \$3	\$15 - \$27	\$12 - \$22
Busch Blvd/Linebaugh Ave Corridor West	2.5	\$6 - \$8	\$5 - \$8	\$2 - \$4	\$18 - \$33	\$15 - \$30
Carrollwood Village to Tampa International Airport	5.2	\$4 - \$5	\$4 - \$5	\$2 - \$3	\$15 - \$30	\$12 - \$22
Downtown Tampa to South Tampa	3.8	\$6 - \$8	\$5 - \$8	\$3 - \$4	\$19 - \$36	\$15 - \$29
Downtown Tampa to USF	13.8	\$12 - \$17	\$11 - \$16	\$4 - \$8	\$37 - \$70	\$29 - \$57
USF to Wesley Chapel	9	\$6 - \$9	\$5 - \$8	\$2 - \$4	\$18 - \$34	\$15 - \$27
Westshore Business District to Pinellas County	2.3	\$3 - \$4	\$3 - \$4	\$1 - \$2	\$9 - \$16	\$7 - \$13

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Cost Estimating Assumptions

Preliminary/ Broad Brush Cost Estimates

- **Cost ranges based on:**
 - National Examples
 - Local Examples
 - LRTP Estimates
 - TBARTA Estimates
- **Contingencies included:**
 - Long Term Planning
 - Engineering & Design
 - Soft Costs (Station Design and Access)

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Cost Estimating Assumptions

Preliminary/ Broad Brush Cost Estimates

- **“Apples to Apples” Comparisons**
 - Assumes all rail to be double-track, at-grade
 - Assumes similar frequencies of service – even though the various types of transit are not usually operated that way
 - Assumes comparable passenger capacities
 - Assumes FRA compliance in freight rail rights-of-way

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Downtown to USF



Downtown to USF

Considerations...

- This is the highest-demand transit corridor in the region
- Traffic congestion on all north-south roads would affect BRT
- I-275 master plan calls for HOV lanes, but unfunded by 2035
- The freight rail right-of-way is important for freight service between Ybor and Downtown
- North of Downtown, possible shared use of the freight rail ROW

Lower Cost Strategy Recommendation

DMU on freight rail track, with new ROW Downtown-Ybor

Caveat: Compare DMU station spacing vs. market being served

Saves up to \$303 M Capital

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$524 - \$1325	\$12 - \$17	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
DMU	\$221 - \$1325	\$29 - \$57	1,800	30-50 Mph	10 minutes	2 - 10 miles



Brandon to Downtown Tampa



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Brandon to Downtown Tampa

Considerations...

- The freight rail right-of-way is important for freight service
- Even if an agreement could be reached with CSX, potential for conflicts between freight and passenger rail
- Selmon Exwy reversible lanes provide good travel time in 2035

Lower Cost Strategy Recommendation BRT on Selmon Exwy reversible lanes

Saves \$304-\$745 M Capital

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$350 - \$883	\$11 - \$16	1,080	15-35 Mph	10 minutes	0.5 - 2 miles
Bus Rapid Transit	\$46 - \$138	\$4 - \$7	810	15-35 Mph	10 minutes	0.5 - 2 miles



Busch/Linebaugh Corridor East



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Busch/Linebaugh Corridor East

Considerations...

- Traffic congestion and limited right-of-way would affect BRT
- Commuter rail or DMU could use existing freight rail track
- Freight rail usage of this corridor is not heavy
- But note community impacts of vehicles larger than light rail

Lower Cost Strategy Recommendation

DMU on existing, parallel track

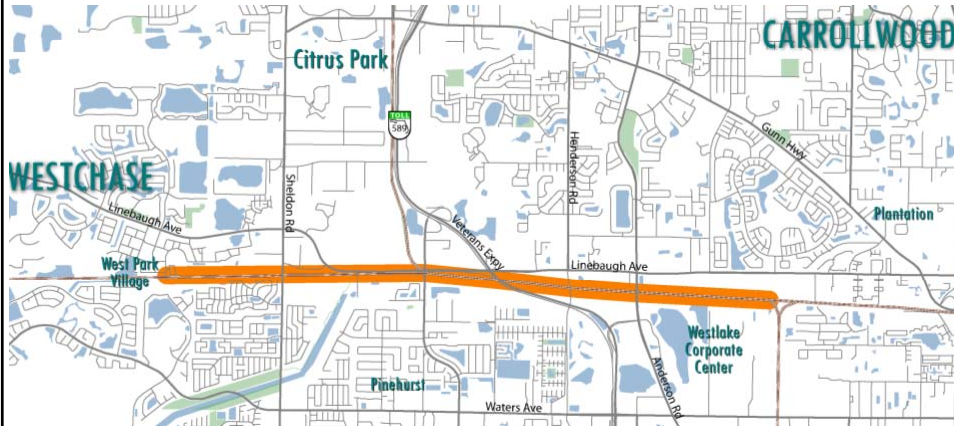
Caveat: Compare DMU station spacing vs. market being served

Saves up to \$116 M Capital

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$201 - \$509	\$4 - \$6	1,080	15-35 Mph	10 minutes	0.5 - 2 miles
DMU	\$85 - \$509	\$12 - \$22	1,800	30-50 Mph	10 minutes	2 - 10 miles



Busch/Linebaugh Corridor West



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Busch/Linebaugh Corridor West

Considerations...

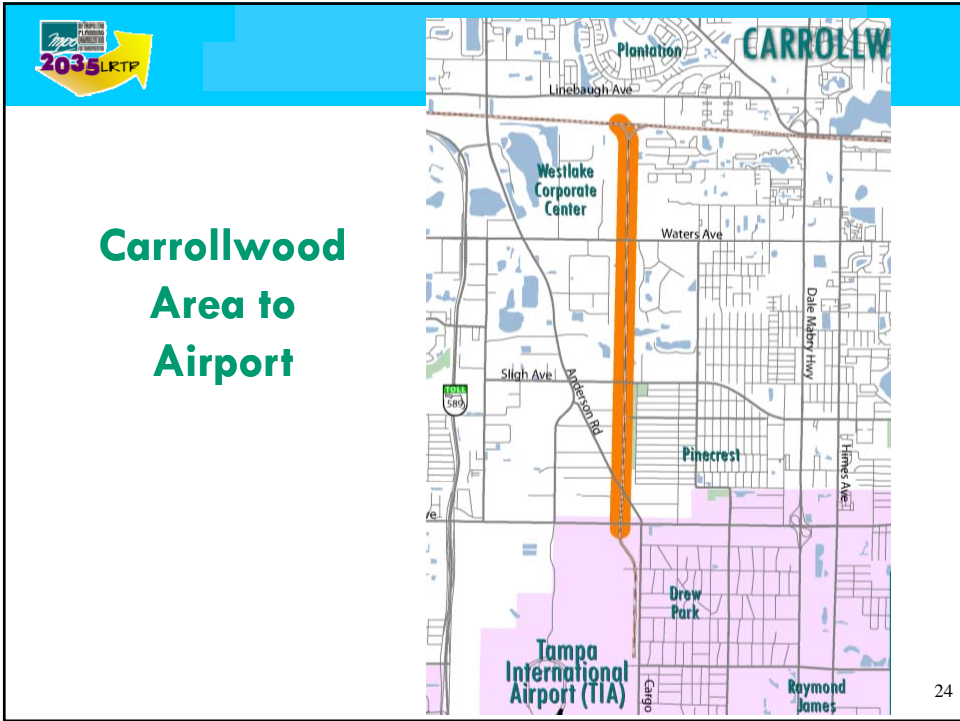
- Would likely be operated with segment to east or southeast
- Commuter rail or DMU could use existing freight rail track
- Less population density along corridor makes it suitable for commuter-focused transit service with its wider station spacing
- Freight rail usage of this corridor is not heavy
- But note community impacts of vehicles larger than light rail

Lower Cost Strategy Recommendation

DMU on existing, parallel track

Saves \$36-\$55 M Capital

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$95 - \$240	\$6 - \$8	1,080	15-35 Mph	10 minutes	0.5 - 2 miles
DMU	\$40 - \$204	\$15 - \$30	1,800	30-50 Mph	10 minutes	2 - 10 miles



Carrollwood Area to Airport

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Carrollwood Area to Airport

Considerations...

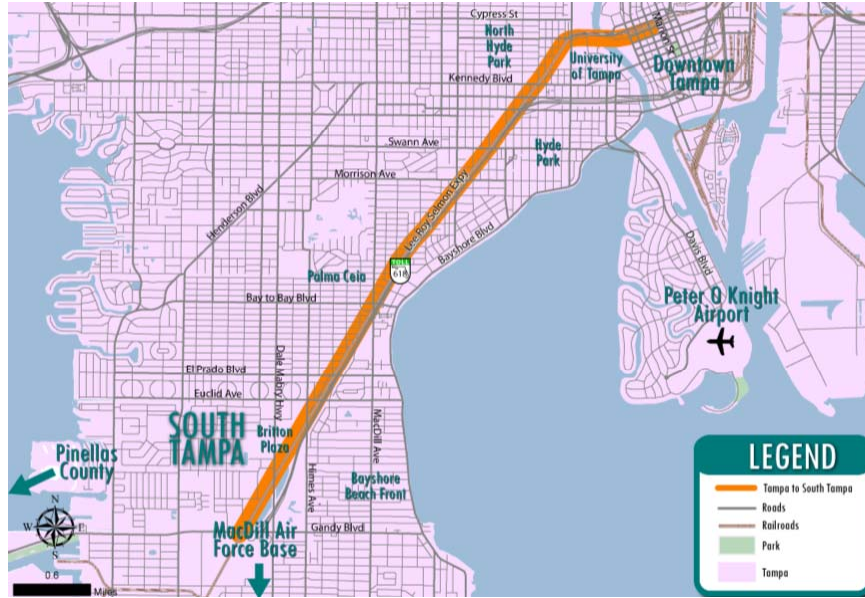
- Congestion on all north-south roads here would affect BRT
- Parallel freight rail corridor is owned by airport and leased to CSX, and not heavily used
- But commuter rail vehicles won't fit through airport itself
- LRT extension from Downtown line may be best choice

Lower Cost Strategy Recommendation
 If not LRT, then BRT to make connection into airport
 Caveat: Study demand, to determine if higher capacity is needed

Saves \$172-\$421 M Capital

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$198 - \$499	\$4 - \$5	1,080	15-35 Mph	10 minutes	0.5 - 2 miles
Bus Rapid Transit	\$26 - \$78	\$2 - \$3	810	15-35 Mph	10 minutes	0.5 - 2 miles

Downtown Tampa to South Tampa



Downtown Tampa to South Tampa

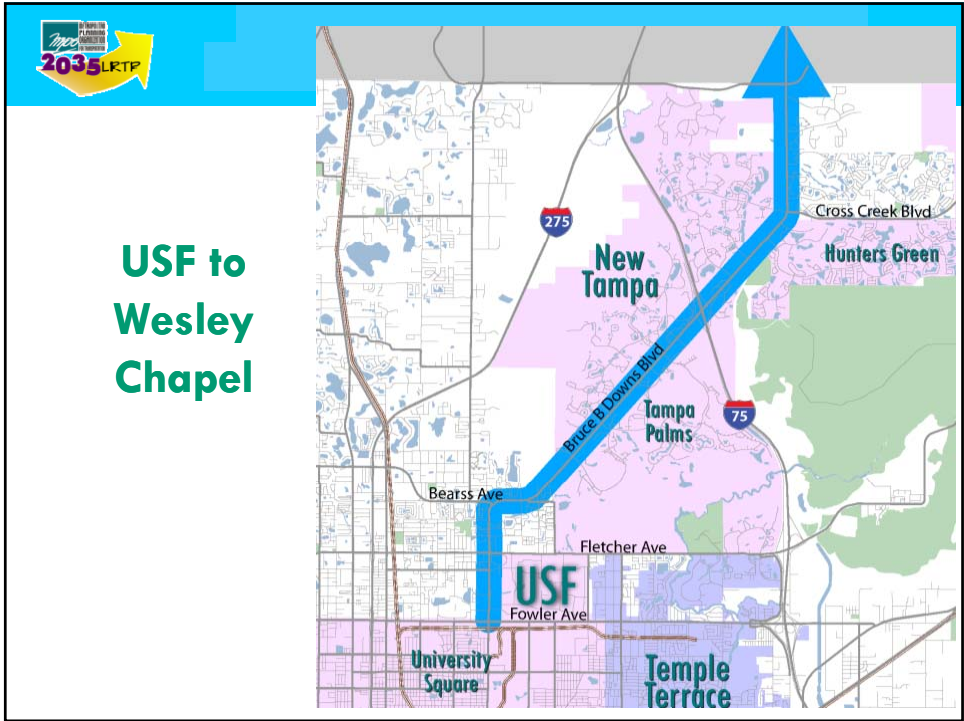
Considerations...

- The freight rail right-of-way is not heavily used
- But development densities suggest station spacing closer than typical commuter rail
- Selmon Exwy provides good travel time in 2035

Lower Cost Strategy Recommendation BRT on Selmon Exwy

Saves \$125-\$308 M Capital

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$144 - \$365	\$6 - \$8	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
Bus Rapid Transit	\$19 - \$57	\$3 - \$4	810	15-35 Mph	10 minutes	0.5 – 2 miles



USF to Wesley Chapel

USF to Wesley Chapel

Considerations...

- There is no parallel freight rail right-of-way
- Traffic congestion on Bruce B. Downs would affect BRT
- Demand is at top end of BRT's capacity

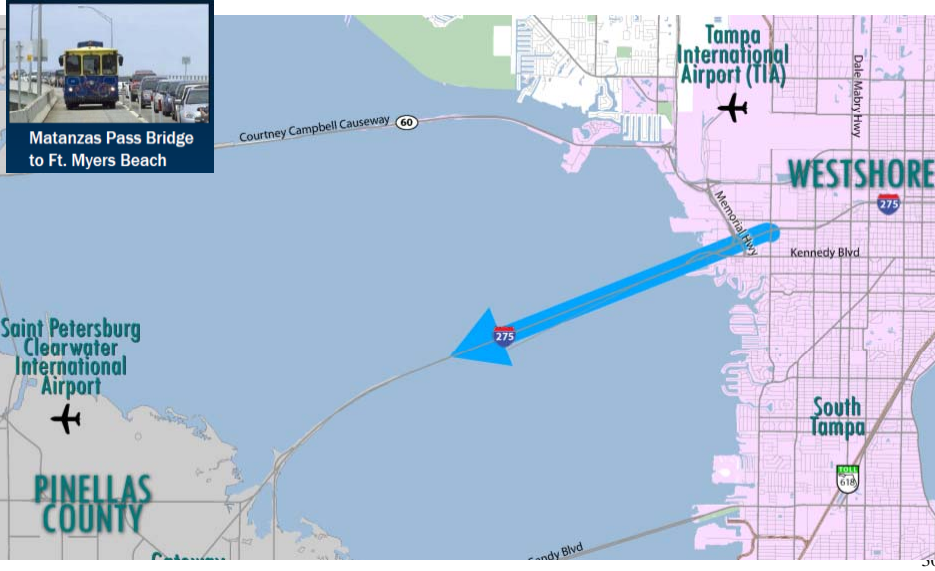
Lower Cost Strategy Recommendation
BRT on Bruce B. Downs Blvd
Caveat: Traffic priority treatments (lanes, signals) needed

Saves \$297-\$729 M Capital

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$342 - \$864	\$6 - \$9	1,080	15-35 Mph	10 minutes	0.5 - 2 miles
Bus Rapid Transit	\$45 - \$135	\$2 - \$4	810	15-35 Mph	10 minutes	0.5 - 2 miles



Westshore Area to Pinellas County



Westshore Area to Pinellas County

Considerations...

- There is no parallel freight rail right-of-way
- Traffic congestion on the bridge could affect BRT
- Potential to coordinate with FDOT bridge reconstruction and include lanes/shoulders or separate bridge
- Demand may be higher than BRT's capacity

Lower Cost Strategy Recommendation

BRT on I-275 bridge

Caveats: Study demand, to determine if higher capacity is needed, and coordinate with FDOT and Pinellas transit studies

Saves \$75-\$186 M Capital

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$87 - \$221	\$3 - \$4	1,080	15-35 Mph	10 minutes	0.5 - 2 miles
Bus Rapid Transit	\$12 - \$35	\$1 - \$2	810	15-35 Mph	10 minutes	0.5 - 2 miles



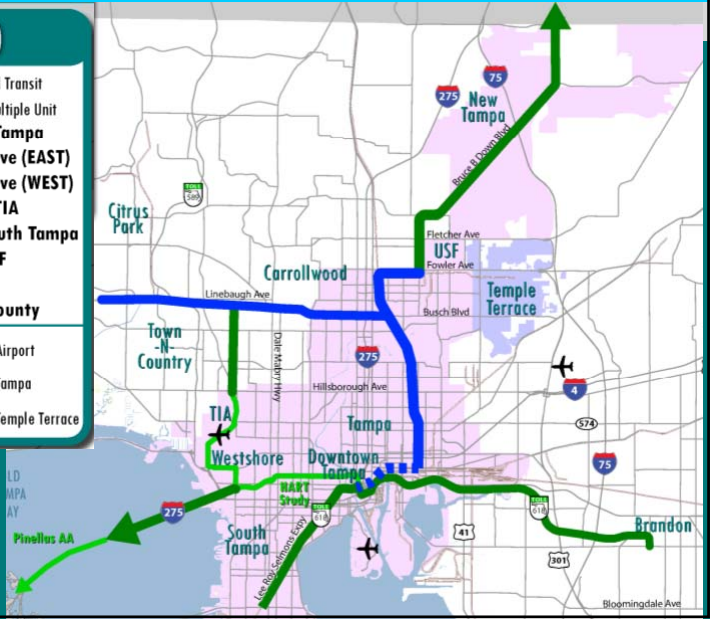
Lower Cost Strategy Recommendations

LEGEND

- Proposed Bus Rapid Transit
- Proposed Diesel Multiple Unit
- Brandon to Downtown Tampa**
- Busch Blvd/Linebaugh Ave (EAST)**
- Busch Blvd/Linebaugh Ave (WEST)**
- Carrollwood Village to TIA**
- Downtown Tampa to South Tampa**
- Downtown Tampa to USF**
- USF to Wesley Chapel**
- Westshore to Pinellas County**

- Other Studies
- Airport
- Roads
- Railroads
- Tampa
- Temple Terrace

Saves
\$1.428 B
- \$2.863 B
Capital



Other Mobility Improvements

Cost Reduction Strategies

Special –Use Lanes

- High-occupancy lanes & HOT
- Express lanes, variable price to maintain speed
- Reversible lanes
- Bus shoulders

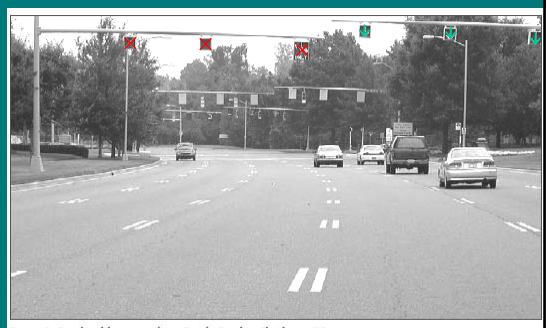
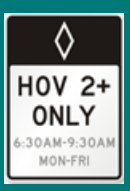


Figure 2. Overhead lane signals on Tyvola Road in Charlotte, NC.

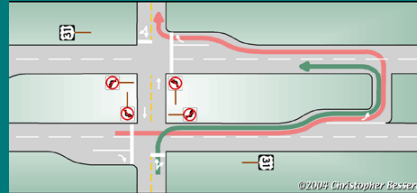


Other Mobility Improvements

Cost Reduction Strategies

Intersection Strategies

- Creative interchanges
e.g. US 19; \$40-\$50 million ea.
- Michigan U-Turn
- Roundabout
- Bus Queue-Jump
- Signal operations



Need for Mobility Improvements

High-Congestion Corridors

Tier 1

- SR 580/Hillsborough Av, west of Dale Mabry thru Town & Country
- I-275 through Tampa (all segments south of Bearss)
- SR 60/Adamo Dr/Brandon Blvd, east of 50th St thru Brandon
- US 92/Dale Mabry Highway, north of Kennedy Blvd thru Northdale
- Bearss Ave, Florida Ave to 30th St, and US 41 north of Bearss Ave
- Gunn Hwy, west of Veterans Exwy thru Keystone
- Kennedy Blvd
- Fowler Ave, and US 301 northeast of Fowler Ave
- I-75, north of Big Bend Rd thru New Tampa
- US 301 in Brandon



Need for Mobility Improvements

High-Congestion Corridors

Tier 2

- Boy Scout Blvd/ Spruce St, west of Dale Mabry
- SR 574/ML King Jr Blvd, east of Dale Mabry through Tampa
- I-4
- Westshore Blvd, north of Gandy Blvd through South Tampa
- US 41 and US 301, south of Selmon Exwy through Gibsonton/
Riverview
- Dale Mabry Hwy, through South Tampa
- Sheldon Rd, north of Hillsborough Ave through Citrus Park
- Gunn Hwy, west of Dale Mabry through Carrollwood area
- Gandy Blvd, west of Dale Mabry to Gandy Bridge



Funding Alternative Strategies

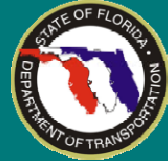


What we looked at...

Revenue Source Options

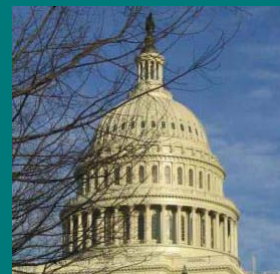
- Half-cent Sales Tax
- Local-option Gas Tax
- Property Tax
- Public-Private Partnership Case Studies
- Special Assessment Districts
- Mobility fees/ Impact fees
- Toll facilities & revenues
- Federal & State Programs

Information Sources



Fed Programs & Pending Legislation

- From federal gas tax – currently 18.4 cents per gallon
- Federal Transit Administration (FTA) competitive programs
 - New Starts – \$1.5 billion 2011 nationwide
 - Small Starts – \$200 million 2011 nationwide
- Federal Aid Highway Program
- Surface Transportation Program (STP)
 - \$21 million per year estimated to Hillsborough, countywide
- All under 2005 Authorization, SAFETEA-LU
 - Expired 2009
 - Five extensions to September 30th 2011
 - Budget cuts are anticipated





Some State Programs

- Mostly funded through state gas tax, 18.6 cents/gallon
- Strategic Intermodal System (SIS) - \$60 million in D7 2011
- County Incentive Grant Program (CIGP) - \$4.9 million in D7 2011, provides 35%-50% of project cost
- Florida New Starts Transit - \$80 million statewide, provides equal match to local dollars in a federal/state/local New Starts project, **may be de-funded**
- Transportation Regional Incentive Program (TRIP) – **De-funded**
- Park and Ride Program – varies by project
- Transit Corridor Program - \$20 million D7 2011, provides 50% - 100% of capital or operational costs

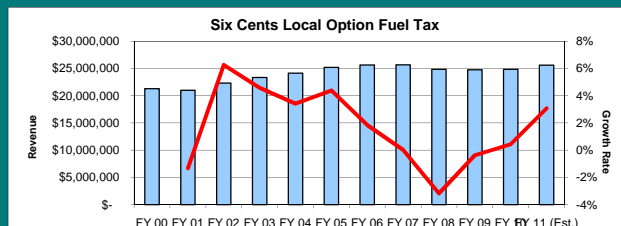


Local-Option Gas Taxes

Hillsborough levies 7 cents per gallon out of 12 cents maximum

- Unused 5-cent levy cannot be used for routine maintenance
- Can be levied by BOCC extraordinary vote
- One penny raises \$6.8 million dollars (right now)
- Neighbors levy:

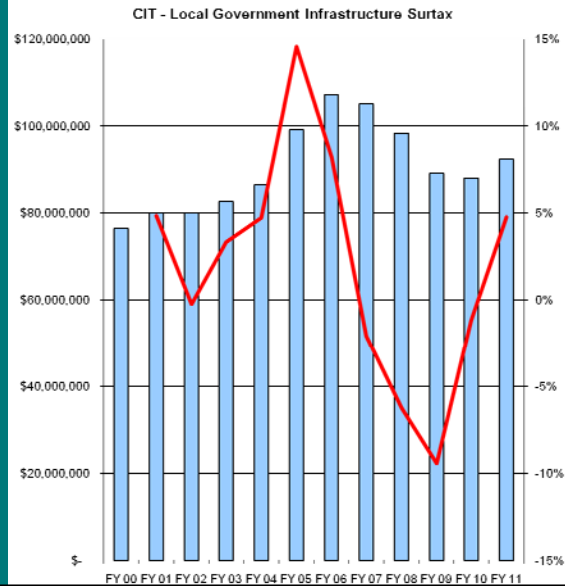
12 cts	Polk, Manatee, Sarasota, Citrus
9 cts	Hernando
7 cts	Hillsborough, Pinellas, Pasco





Local-Option Sales Tax

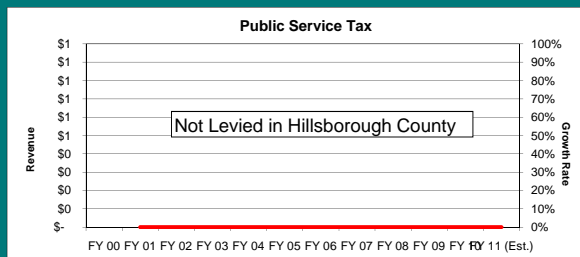
- Hillsborough levies ½ cent on \$1 purchase
- Can levy another 1 cent
- Requires referendum
- Pinellas, Pasco: 1 cent
- Cities not authorized



Public Service (Utility) Tax

Levied in Cities but not in Hillsborough County unincorporated area

- Can levy up to 10% tax on sale of electricity, metered natural gas, liquefied petroleum, and/or water service
- Can be levied by ordinance
- City of Tampa currently generates \$11 million per year





Tolls

Tolls in Hillsborough

- Veterans Exwy 15 mi \$1.25-\$1.75
- Selmon Exwy 14 mi \$2.50
- Suncoast Pkwy 42 mi \$3.00
- I-4/ Selmon Connector - *Upcoming*



Other Local Toll Concepts

- New Tampa Blvd Extension
- Gandy Elevated Lanes
- I-4, I-75, I-275 Express Lanes
- Value Pricing Pilot study



South Florida I-95 HOT Conversion

- 36.8% of revenues go to exp. Bus



Lee County toll interchange



Fares and System Revenues

- Farebox revenues pay for....
 - Approx. 20% of operating costs (HART)
 - Light rail lines maybe 30%
- Advertising
 - HART buses & stops: ~\$160,000 /year
- Naming rights for stations, stops, lines
 - NYC, LA, Chicago, Cleveland, Las Vegas, Minneapolis
- TECO Line Streetcar naming rights
 - Line name: \$1 million
 - Vehicle names: two sold for **\$250,000 each**
 - Station names, ten years: eight sold for **\$100,000 each**





Special Districts

- **Downtown/Ybor Special Assessment District**
 - Created by City Council in 2000 (notice of intent, hearing)
 - Properties assessed at 0.33 per \$1,000 value (except owner-occupied res.)
 - Supports TECO Line Streetcar System

- **Westshore Special Assessment District**
 - Created by City Council in 2003
 - Generated **\$309,136** in 2009
 - Properties assessed at 0.127 per \$1,000 value
 - Supports transportation, security, & marketing

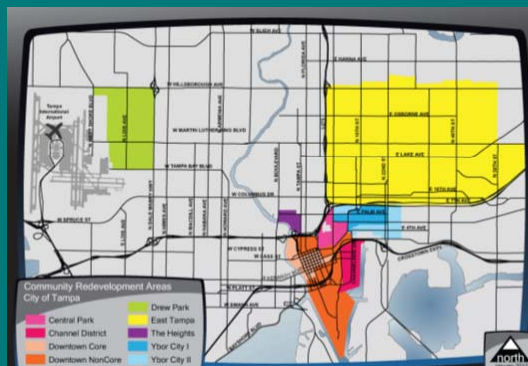
- **Atlanta Beltline Tax Allocation District**
 - New assessment on property value
 - To support 22-mile light rail project, part of local match
 - Estimated to raise **\$500 million**



Tax Increment Financing (TIF)

- **Community Redevelopment Areas (CRAs)**
 - Florida allows TIF in CRAs: any growth in property tax revenue in the area is thereby dedicated to area improvements
 - Designation requires documented “slum & blight” condition
 - Local government designates area and adopts CRA Plan of improvements
 - Tampa has 8 CRAs
 - **\$34 million** in 2009 for capital

- **Denver FasTracks TIF**
 - Supports Gold Line rail project
 - Part of the 50% local match for federal New Starts grant
 - TIF + Met District funds + Devmt. rights to generate **\$186 million**





Impact Fees/ Mobility Fees

- **Impact Fees**
 - LRTP Forecast: **\$94 million over five years, 2016-2020**
 - Capital projects only
 - Availability, timing & location tied to development

- **Jacksonville Mobility Fee**
 - Five zones, each with fee based on area's average VMT
 - Transportation deficiencies for all modes are based on Comp Plan
 - Credits for VMT reduction
 - Fees are standardized , pay-and-go, and lower than under concurrency proportionate fair share system



Financing Strategies for Sooner Build

- **Bonding**
 - e.g. CIT

- **State Infrastructure Bank (SIB)**
 - Loans
 - Credit enhancement assistance
 - \$52 million available 11/12 statewide
 - Two THEA projects, \$48 million, 3.5% interest rate
 - One HART project, \$4 million, 0% interest rate

- **TIFIA: Gap Financing**
 - Loans for up to 1/3 of project
 - Loan guarantees
 - \$450 million avail. nationwide – Obama proposed budget
 - Rate for 35 years: 4.64% (March '11)





Public-Private Partnerships (P3s)

Concessionaire P3

- I-595 Tollway, South Florida
 - 3 reversible lanes in median with BRT
 - 10.5 mi, I-75 to Florida's Turnpike
 - 35-year DBOM
 - \$4.74 billion, supported by tolls & \$1+ billion fed grants
 - Concessionaire operates 30 years, covers any cost overruns
- Denver, CO "Eagle P3"
 - 2 commuter rail lines, 36 miles, 13 stations incl. Downtown
 - DBFOM for up to 45 years
 - \$2 billion construction, supported 50% by fed grants
 - **Concessionaire finances \$450 million**
 - Transit agency finances \$400 million



Public-Private Partnerships (P3s)

Station Area Development P3

- Charlotte, NC
 - 16-acre mixed-use devt. near LRT station
 - 500 housing units, 80 affordable
 - \$18 million
 - City discounted site price \$2 million, to be repaid by developer over 30 years
- Carrollton, TX (Dallas area)
 - RFQ for Master Developer of 3 LRT Stations
 - City contributes \$13 million, supported by TIF revenues
 - Consultant pays City annual ground lease & parking lease
 - Payments gradually increase
 - On sale of buildings, City receives 7% of gross margin





Potential New Funding Sources

Gas Tax 5-cent local option available for capital only (~ \$34 million)

Sales Tax

- Consider tax swaps (HART ad val ~ \$30 million)
- Consider less than 1 percent
- Consider legislation to allow Cities to vote (Tampa ~ \$49 million)

Special assessments New districts, new or renewing CRAs
(Westshore District generated ~ \$300,000)

User Fees Tolls & fares (can be bonded) and impact/mobility fees

Utility Tax Consider levying in unincorporated area (~ \$27 million)

Public/Private Partnerships

- Station Area Development
- Design/Build/Operate/Maintain/Finance (financing, ~ 5% savings?)



Q & A