



# PSTA Replacement Buses

Decision-Making Guide for PSTA Board

Pinellas Suncoast Transit Authority (PSTA)  
St. Petersburg, Florida



## Review

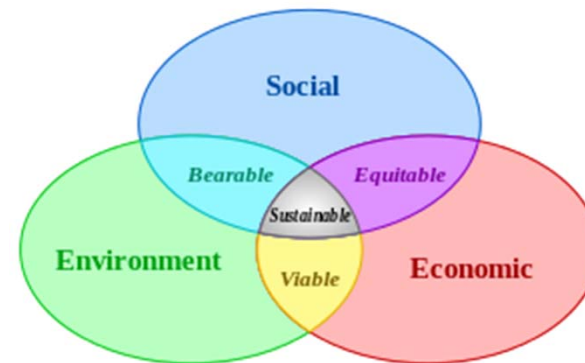
- **PSTA Adopted Sustainability Policy & 2013 Hybrid Bus Analysis**
- **PSTA's Total Capital Improvement Program**
- **Bus Options**
  - Emission Comparisons
  - Financial Comparisons
  - Operational Comparisons
- **Sample Scoring System: Possible Recommendation**



# PSTA Sustainability Policy

- Adopted February 2014 Policy Requires Comprehensive Decision-making:

- Financial
- Environmental
- Social



- October 2013 Staff Recommendation to Approve Hybrid-Only Purchase Policy Not Approved By Board (Bujalski, Scott) to maintain future flexibility.



## PSTA's Sustainable Plans

- **Greenlight Plan** set aside \$46M to fund hybrid-bus replacement assumption through 2020.
- **Path Forward Plan:**
  - Cut \$7M in other programmed projects
  - Plan to Privatize services to reduce fleet size
  - Extended replacement cycle from 12 to 15+ years
  - Sets Aside \$28.5M for replacement buses through 2020.



## Why is a Fleet Plan Important?

- Must have sufficient working buses to provide schedule.
- Older buses more costly to maintain than newer buses.
- “No Plan” historically added burden to local funding.  
Now lack of planning adds burden to all funding.
- Fleet planning permits smarter investments
- FTA/FDOT requirement
  
- PSTA’s Plan Provides Time for Advocacy/Partnerships before “Cliff” in 2019/2020 arrives.



# Sustainable Fleet Replacement Plan

Year	Fleet	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
2001	Gillig 40'	6							
2002	Gillig 40'	9	9	6					
2003	MCI 40'	9	9	9					
2005	Gillig 40'	8	8	8	8				
	Gillig 35'	7	7	7	7				
	Gillig 29'	5	5						
2006	Gillig 40'	35	35	35	24	24	15	4	
	Gillig 35'	12	12	12	12	12	5		
2007	Gillig 40'	11	11	11	11	11	11	11	11
	Gillig 35'	7	7	7	7	7	7	7	
	Gillig Trolley 35'	3	3	3	3	3	3		
2008	Gillig 40'	15	15	15	15	15	15	15	15
	Gillig 35'	6	6	6	6	6	6	6	6
	Gillig Trolley 35'	6	6	6	6	6	6	6	6
2009	Gillig Hybrid 35'	3	3	3	3	3	3	3	3
	Gillig BRT 35'	2	2	2	2	2	2	2	2
	Gillig Trolley Hybrid 35'	7	7	7	7	7	7	6	6
2010	Gillig 35' Hybrid	14	14	14	14	14	14	14	14
2012	Gillig 40' Hybrid	8	8	8	8	8	8	8	8
	Champion Cutaway	8	8						
2013	Gillig 40' Hybrid	8	8	8	8	8	8	8	8
2014	Gillig 40' Hybrid	8	8	8	8	8	8	8	8
2015	Gillig 40' Hybrid	13	13	13	13	13	13	13	13
	El Dorado Cutaways	2	2	2	2	2	2	2	
2016	Gillig 40' Hybrid		5	5	5	5	5	5	5
	Gillig 29' Shuttle		0	0	0	0	0	0	0
	Gillig 40' OTR Coach								
2017	Gillig 40' Hybrid			5	5	5	5	5	5



# 2007 Buses Like This Must Run to 2024



# Bus Technology Options

- **Hybrid-Electric**
  - PSTA has 60 Gillig Hybrids (1/3<sup>rd</sup> of Fleet)
  - Proven Technology
- **Diesel**
  - Future Engines Much Cleaner than Existing PSTA Buses
  - Proven Technology
- **All Electric**
  - Proterra/BYD/New Flyer & Future Gillig
  - Promising Technology
  - Requires Charging Stations
- **Refurbished Electric**
  - Custom Coach Works/ZEP Bus
  - Few in service showing reliability issues.
- **CNG**
  - Gillig offers CNG Option
  - Proven Technology
  - New Financing Arrangements Spread Up-Front Compressor Costs





# Emission Comparison\*

	Diesel	Hybrid	Electric	CNG
<b>Fuel Economy</b>		10%-20% Better than Diesel	Best	Same as Diesel
<b>Air Quality</b>	Much better than Old Diesels	Better Fuel Economy Leads to Slightly Better than Diesel	Best	Lower NOx Higher CO Low PM/NMHC
<b>Climate Impacts</b>		Better than Diesel or CNG	Best	Total GHC emissions slightly higher than Diesel

*\*Comparison of Modern CNG, Diesel and Diesel Hybrid Electric Transit Buses Efficiency & Environmental Performance, mjbradley.com, November 2013.*



# Financial Comparison

	Diesel	Hybrid	Electric	Refurb Electric	CNG
<b>Purchase Cost</b>	\$500,000	\$695,000	\$840,000	\$580,000	\$540,000
<b>Life-Cycle Cost</b>		+\$40K vs. Diesel over 500K Miles (PSTA 2013 Study)	Too New – Maintenance Costs Likely = Diesel	Old Bus presents risk.	Same as Diesel*
<b>Facility/ Charging Costs</b>	\$0	\$0	\$350,000 Per Charging Station	\$25,000	\$1M Facility Safety Revisions

*\*Capital Metro CNG Implementation Study, Texas Transportation Institute, November 2011.*



# Operational Comparison

	Diesel	Hybrid	Electric	Refurb Electric	CNG
<b>Reliability</b>		Proven Reliability Battery Replacements?	Promising Results	Not Proven Old Bus	Proven Reliability
<b>Span of Service</b>	All Routes	All Routes	15 of 40 Routes	15 of 40 Routes	All Routes
<b>Social Issues</b>	Yes	Best in Urban/Beach	On-Route Charging Stations	Not Proven	Domestic Fuel
<b>Timeline</b>	1 Yr.	1 Yr.	3-5 Years – Fed LoNo Grant May Be Needed	2-3 Yr.	4 Years



# Sample Scoring (Env. Weight)

	Diesel	Hybrid	Electric	Refurb Electric	CNG
<b>Emissions (3 Points)</b>	0	2	3	3	0
<b>Cost (4 Points)</b>	4	1	0	1	3
<b>Operational /Social (3 Points)</b>	0	2	2	0	1
<b>Total</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>4</b>



## Sample Scoring (Cost Weight)

	Diesel	Hybrid	Electric	Refurb Electric	CNG
<b>Emissions (2 Points)</b>	0	1	2	2	0
<b>Cost (5 Points)</b>	5	2	0	2	3
<b>Operational /Social (3 Points)</b>	0	2	2	0	1
<b>Total</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>4</b>



## Possible Strategy - October

### Strategic Leadership

- Continue Strong Advocacy for More Federal/State Funds

### Approve Electric Bus Pilot Program

- Aggressive Pursuit of LoNo Grant Funds in 2015-2016
- Design Electric Bus Pilot Test & Identify Charging Station Locations on Specific Route

### Needed Action for Continued Sustainability

- Purchase 5 2016 Hybrid-Electric Gilligs.



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# Questions? Comments

