Electric Transit Circulator Feasibility Study

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Study Objective

- To assess the feasibility of using electric vehicles as the mode of choice for municipal, neighborhood, and other transit circulator services in Miami-Dade County...
Several Miami-Dade cities have expressed interest in developing or helping to fund circulator services

- Desire to improve mobility of residents
- See the benefits of locally-tailored service

Recognize the success of the ELECTROWAVE in Miami Beach and the attractiveness of the quiet, clean electric vehicle technology
Study Areas

- Aventura
- North Miami Beach
- North Miami
- Sunny Isles Beach
- Bal Harbour
- Surfside
- Miami Lakes
- Hialeah
- Airport West

- Overtown
- Downtown Miami
- Brickell
- Coral Gables
- Coconut Grove
- South Miami
- “Downtown Kendall”/Dadeland
- Homestead/Florida City
- Everglades/Biscayne National Parks
Electric Vehicles (EVs)...

- Great for public relations and rider acceptance
- Reduced/eliminated emissions
- Very quiet, smooth ride
- Emit no offensive smells/exhaust
- Low-floor for easy access
- Capable of 50 mph speed
Electric Vehicles (EVs)...

- Cost to charge battery is 1/3 the cost of equivalent amount of diesel to run engine same distance
- Regenerative braking
- 1 moving part in electric motor—847 moving parts in ICE
- Reduced routine maintenance and parts inventory due to simplicity
Pure Electric vs. Hybrid-Electric

Choose pure electric if:
- routes are relatively short
- service will not change much

Choose hybrid-electric if:
- there is a need for extended range
- vehicles might be needed in evacuations
- another fuel facility (for APU) is already available
Explored funding options

CUTR identified several potential federal, state, and local sources

Competing demands for limited capital funding

Partnering will be helpful—more a question of will than way
Lessons Learned

- Ensure mechanical characteristics of buses match operating characteristics
- Comply with ADA
- Assign a dedicated staff
- Need comprehensive training for mechanics and operators
  - continuing/ refresher training helpful
More Lessons Learned

- Be very careful in selecting batteries
- Expect some “bugs” with the new technology—have sufficient spares
- Involve the experts
- Know which parts are needed on-site and which can be secured quickly from the manufacturer
Still More Lessons Learned

- Fully understand infrastructure needs
- Install infrastructure first
  - have building, infrastructure, systems, and trained mechanics in place before vehicles arrive
- Must have high quality service
  - frequent service
  - linear routes—easy to understand service
Some Final Lessons...

- Need a “champion” - must really want it and want to make it work
- Fully leverage the public relations value EVs generate
- Understand that EVs attract non-traditional riders
Where this Technology Makes the Most Sense in Miami-Dade

- Densely developed areas and/or areas with high pedestrian activity
- Areas that are being redeveloped
- Routes characterized by frequent stop-and-go movements
- Where people can be encouraged to use remote parking facilities
Where this Technology Makes the Most Sense in Miami-Dade (cont’d)

- Where they can connect with other regional transit services
- Where synergistic sharing of resources, major facilities, and interlocal service agreements are possible
- Areas willing to provide increased matching money
Areas More Likely to be Candidates in Near Future

- Aventura
- Downtown Miami (Brickell, Flagler Street, & Overtown)
- Coconut Grove
- Coral Gables
- Everglades/ Biscayne National Parks
Areas Somewhat Likely to be Candidates in Near Future

- North Miami Beach
- North Miami
- Homestead/ Florida City
- Hialeah
- South Miami
- “Downtown” Kendall
Areas Less Likely to be Candidates in Near Future

- Sunny Isles Beach
- Bal Harbour
- Surfside
- Miami Lakes
- Airport West
Recommendations

- Development of a thorough plan detailing the need for/nature of local circulator service
- Well-placed champion(s) needed
- Project leader assigned by the community
Recommendations (cont’d)

- Take advantage of available technical resources/experts
- Review the development of EV Ready Broward
- Seek opportunities for partnerships and resource sharing