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…***

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Background

- 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

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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

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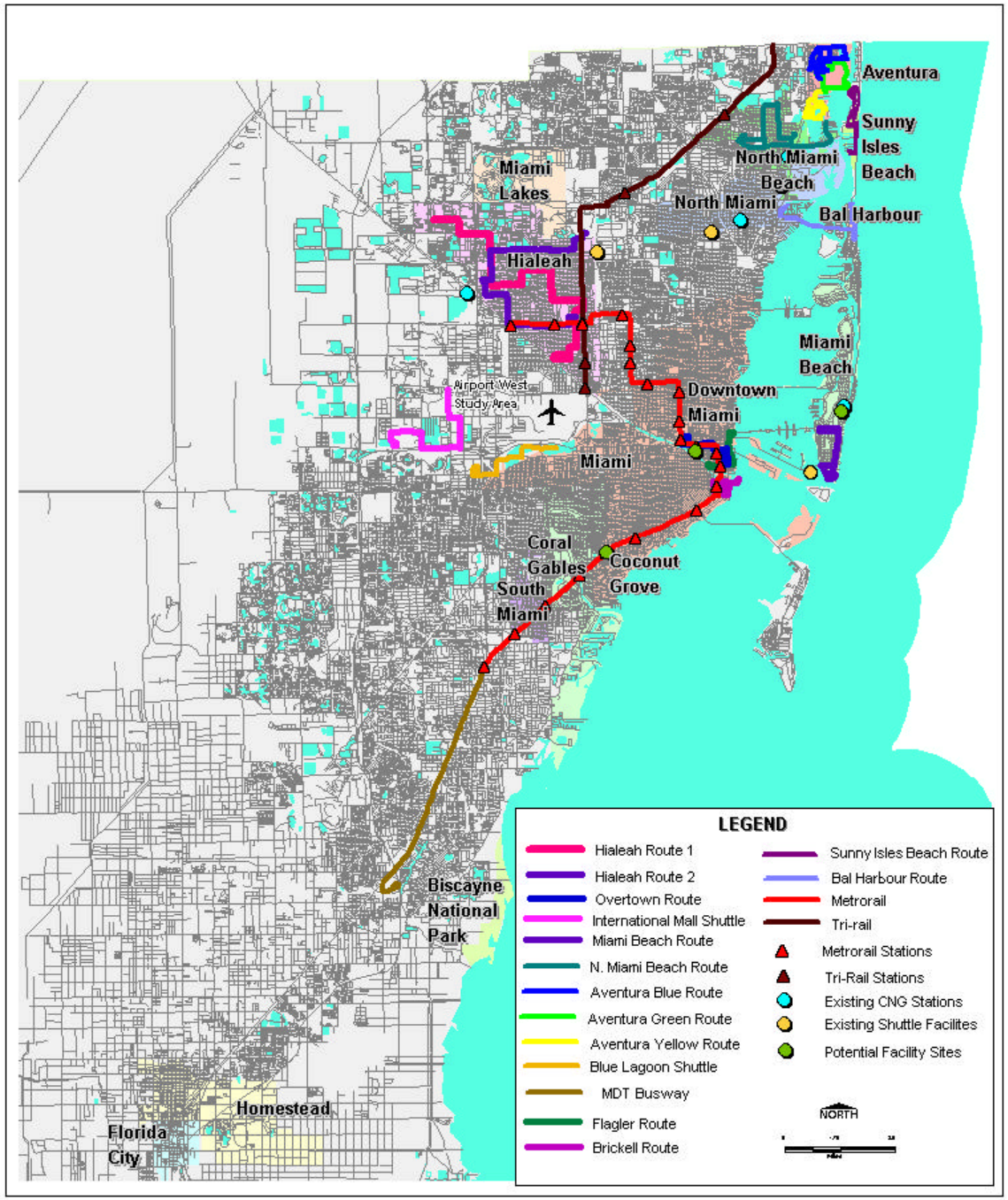
Miami-Dade
Electric Transit Circulator Feasibility Study



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

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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

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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

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Funding Analysis

- 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

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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

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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

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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

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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

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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

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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

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Areas *More Likely* to be Candidates in Near Future

- Aventura
- Downtown Miami (Brickell, Flagler Street, & Overtown)
- Coconut Grove
- Coral Gables
- Everglades/Biscayne National Parks

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Areas *Somewhat Likely* to be Candidates in Near Future

- North Miami Beach
- North Miami
- Homestead/Florida City
- Hialeah
- South Miami
- “Downtown” Kendall

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Areas *Less Likely* to be Candidates in Near Future

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

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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

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Recommendations (cont'd)

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

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