BRT: The case for Porto Alegre

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Background

- Southernmost metropolitan region (MR) in Brazil
  - Peninsular configuration
  - Radial corridors
  - 60% of jobs located in the central area

- Population:
  - City: 1.3 million
  - Metropolitan Region: 3.7 million
Population Distribution in Porto Alegre
Income Distribution in Porto Alegre
Bus operation in Porto Alegre

- **History:**
  - 1865: Carris
    - Currently Carris is the largest Brazilian public transport operator
  - 1928: regulation of bus services
  - 1976: first home-based OD metropolitan survey and transportation plan (total of 4 HB OD surveys were conducted)
  - 1977: introduction of regulated mini-bus lines
  - 1979: introduction of the busways
  - 1980: single unified urban fare (with a fare compensation chamber – clearing house)
  - 1988: private bus operators face a 2-year public intervention
  - 1997: creation of the first private bus consortium
  - 2000: latest bus transportation plan for Porto Alegre
Bus operation in Porto Alegre

Today:

- Current Bus Operators:
  - 15 private bus operators
    - operation in 3 ‘geographical consortiums’
  - 1 public bus operator (Carris)

- Implementation of the Bus Transportation Plan
Transportation in Porto Alegre

- **Bus system:**
  - City of Porto Alegre
    - 1.4 million pax/day (P.Alegre)
    - fleet ~ 1600 buses (5.4 years old)
  - Metropolitan Region (except PoA)
    - 0.5 million pax/day,
    - fleet ~ 1500 buses (10 years old)

- **Mini-bus (regulated services):**
  - City of Porto Alegre
    - 0.07 million pax/day (P.Alegre),
    - fleet ~ 400 mini-buses
  - Metropolitan Region (except PoA)
    - 0.003 million pax/day,
    - fleet ~ 40 mini-buses

- **Metro:**
  - 0.15 million pax/day
  - single metropolitan line
    - 42 km extension
    - operating since 1985

- **Car:**
  - Metropolitan Region
    - 1.9 million pax/day
    - Car fleet in the City of Porto Alegre
      - 0.6 million cars
        - 2.1 inhabitants/car
Busways in Porto Alegre

- Total extension: 30 km
- Design:
  - median exclusive lanes, and
  - bus doors on the right, and
  - bus convoys
- Volume:
  - high bus (up to 300 buses/h/dir.) and
  - high pax flows (up to 25000 pax/h/dir.)
- Planned extensions:
  - Additional 32 km in the MR
  - Additional 24 km for the city of PoA (up 2013)
Bus System:
Other relevant aspects

- Operation in ‘geographical consortiums’
  - concept model in Brazil
- Good relation between
  - management (public), and
  - operators (private sector)
- Carris:
  - Porto Alegre public bus operator
    - Won recently the award for best Brazilian operator
Distribution of Economic Activities in Porto Alegre
Distribution of Commerce Activities in Porto Alegre
Distribution of Education Activities in Porto Alegre
Distribution of Recreational Activities in Porto Alegre
Real State Market in Porto Alegre

- Houses
- Apartments
Possible New BRT Projects

- Modernization of Current Busways into Bogotá type BRT system

- Implementation of New BRT corridors in the Southern Region of the city
Modernization of Existing Busways

- What could be considered
  - Improve current design into Bogotá style BRT corridors
  - Integrate the corridor up-grade with articulated urban development project
    - Urban renewal on the Porto Alegre Central Region
    - Generation of revenues from the real state market
      - Solo criado

- Possible corridors to be up-graded
  - Av Assis Brasil
  - Av Farrapos
  - Av Bento Gonçalves
Assis Brasil / Farrapos / Bento Gonçalves BRT System
New Southern BRT Systems
Farrapos Corridor
Assis Brasil Corridor
Central Area Bus Terminals
New Southern BRT Systems

- No bus corridors exist in the southern region of Porto Alegre.
- Southern corridor along Av Borges Medeiros shows similar demand of other existing corridors.
Conclusions

- Porto Alegre is one of the pioneer cities implementing BRT corridors (started in 1979)
- Their corridors considered how the bus operation strategies inside the corridors – Bus Convoys
- Porto Alegre corridors must now be modernized:
  - Stations on the center, door’s on the left side
  - Pre-board payment and free transfer
  - Bus overtaking lanes
  - Urban development program alongside the corridor modernization
- **Challenge:** setup PPP program, based on capturing part of the rise of property value for new constructions:
  - Urban operation,
  - CEPAC (Additional Building Area Bond)
  - Develop a comprehensive and appealing urban intervention plan to boost the selling of CEPAC’s to real state developers