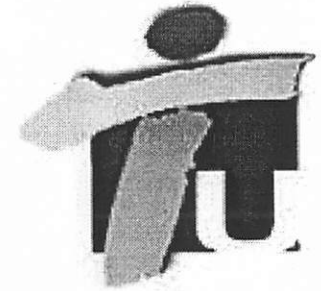


Tren Urbano Research Group 1999 Summer Session



Urban Design and Architecture of the Tren Urbano
Degetau Station at the intersection of PR3 and PR181

Design of the station as an inter-modal station and as
the core of a Transit Oriented Development

Sonia M. Miranda-Palacios
Advisor: Ken Kruckemeyer
June 8, 1999

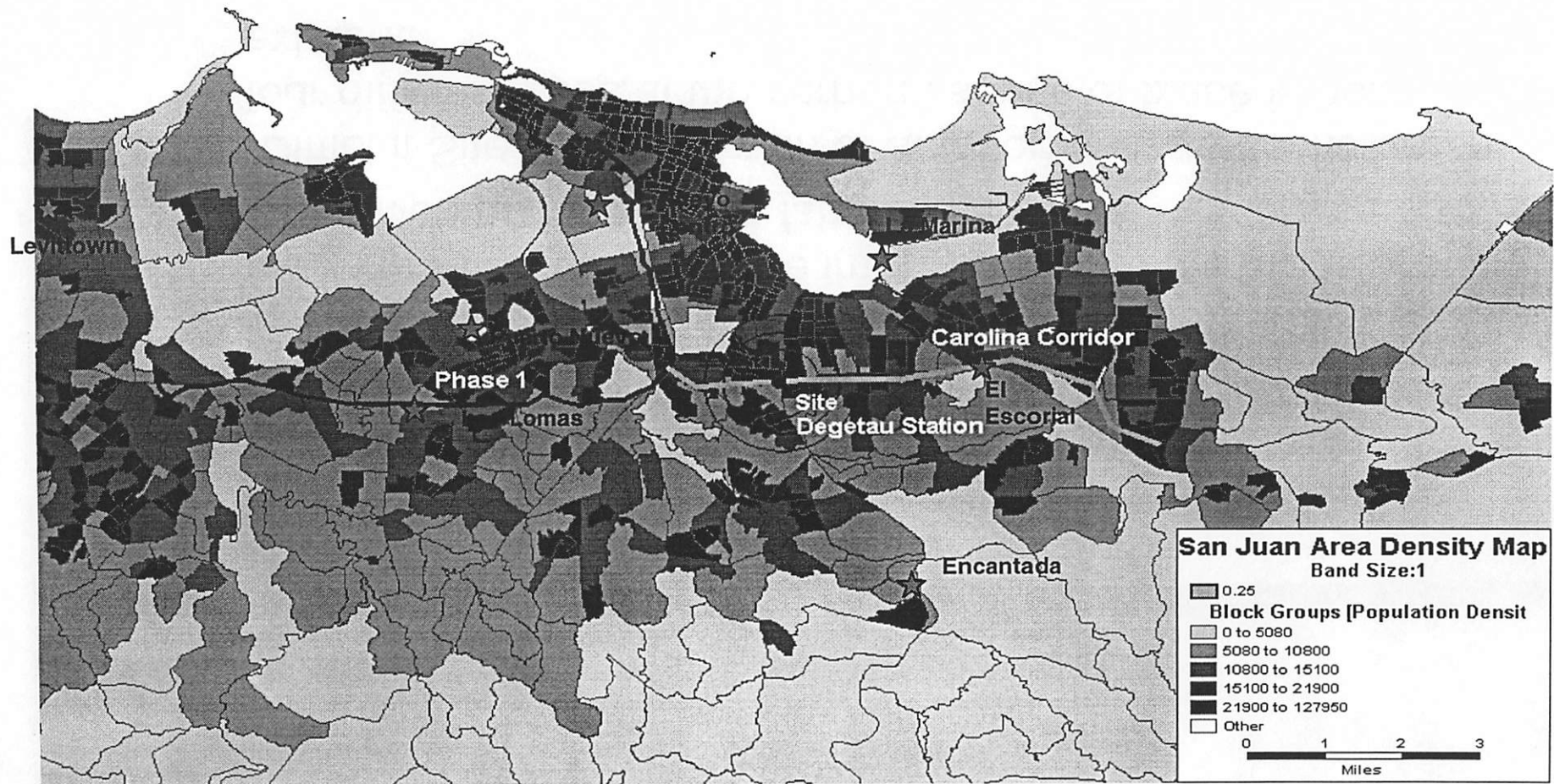
Objectives

- | To design the Tren Urbano Degetau Station (architectural design) and the area/neighborhood surrounding it as a Transit Oriented Development (urban design).
- | The station will be the primary element to give cohesion and a sense of place to the area.
- | The region will be a new prototype for designs and schemes where alternatives to contemporary solutions to traffic problems are achieved.
- | To use local case studies to understand and analyze the development design ideas and schemes that have been in use in Puerto Rico for different residential projects.

Motivation

- | NEED to re-develop and re-conceptualize the way we are designing and building new residential and mixed-use neighborhoods.
- | Use the Tren Urbano construction and its insertion in the urban fabric to catalyze the improvement of the areas around the station and the urban fabric as a whole.
- | “Difficult Site” - construction of an overpass, traffic increment, four different uses at the corners, sense of place is non-existent.
- | Need to improve the transportation connections and access to the area.
- | San Juan today features one of the worst traffic congestion and averages three times more motor vehicles per lane-mile of road than any city on the United States.

At the Regional Level ...



At the Site Level ...



Puerto Rico Planning Agency, 1995

- Understand the visible and hidden connections that persons have to a place
- Aerial Photos - understand the growth & development of the area, observe trends, changes, stable and unstable elements, etc...

Site Area Specifics ...

- Statistics/Maps on housing and living, and movement in and around the neighborhood (circulation paths)
- Population Density, Households, Age, Persons per Households, Households Types and Relationships, Residence in 1985, Place of Work, Workers in Family, Means of Transportation to Work, Private Vehicle Occupancy, Travel Time to Work, etc ...



Town Center

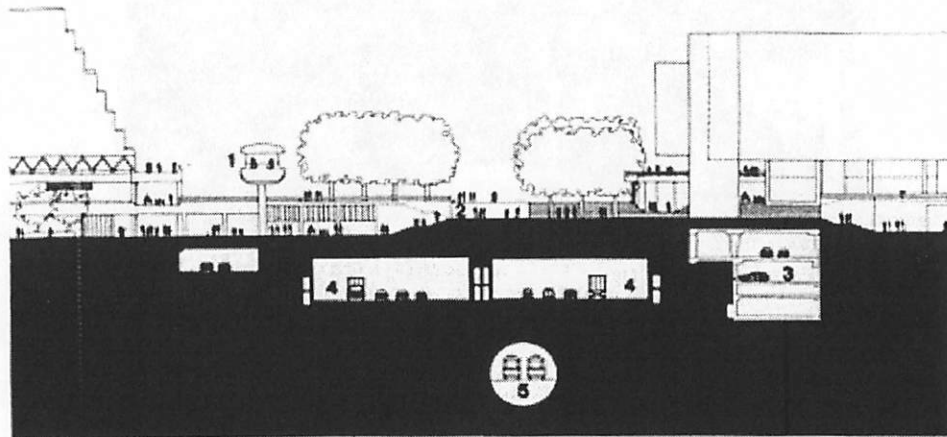
Neighborhood Development



"Improving Charlotte neighborhoods and the lives of people."

- Case Studies (Overview)
 - as precedents for town development (general historic overview)
 - researched in Puerto Rico (unbuilt and built projects)
 - current trends in town development (DPZ, new urbanists, etc...)
 - other agendas for town development (Leon Krier's Completar Santurce, etc...)

Interchange/Multimodal Station



Section showing the relation of the tube (1) carrying pedestrian conveyors to the deck, (2) The motorways (4) and express metro (5) run below the landscaped deck.

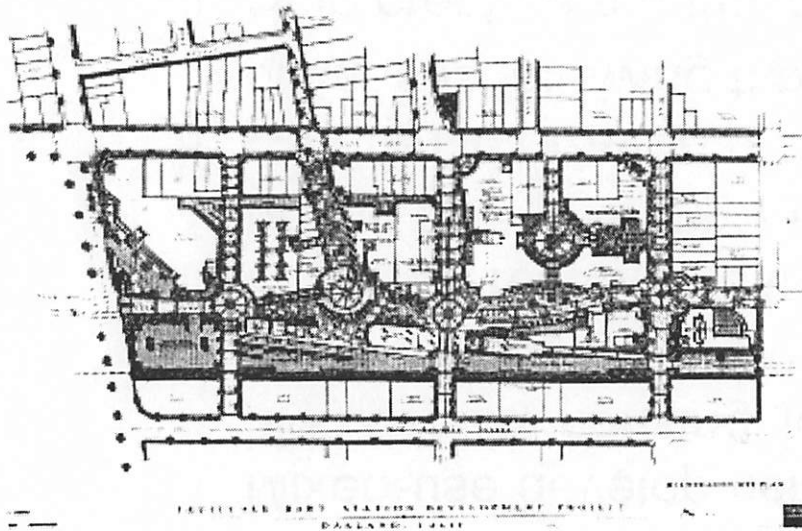
- A place where a transfer between one or more kinds of transportation systems occurs.
- Different kinds: Park & Ride, Kiss and Ride, Car to Bus or Rail, Bus to Rail, Pedestrian to rail or Bus, etc
- Basic notions: The traveling public dislikes interchanging and any ideal transit system avoids the need for interchange.
- Disadvantage: passengers loose time.

Transit Oriented Development

■ Definition:

- | Mixed-use developments and communities with moderate to high density housing, jobs, retail, and services concentrated along the regional transit system and in strategic nodes
- | Focus on reinforcing transit, even though transit should not be the sole and only primary concern
- | Created in order to provide many destinations within walking distances, allowing trips to be combined
- | Help create a healthy and pedestrian community while increasing ridership levels
- | Promotes alternatives to auto use and affordable communities

TODs Precedents



- Cervero's and Bernick's Transit Villages
- Calthorpe's TODs and Pedestrian Pockets
- Historic Streetcar towns
- *Are these the correct precedents to follow?*

Work to be done during summer ...

■ Site Survey

- To obtain data to establish the daily pattern of life, information on the dynamics and people's movements, and key elements like traffic jams, volumes & circulation alternatives, schools, commerce/retail, etc...

■ Further research on TODs precedents in Puerto Rico

- Historic Train and Trolley System
- "Paradas" along Ave. Ponce de León and Fernández Juncos

What am I trying to achieve?

- Site design concept
- Propose the bus, auto and pedestrian circulation
- Propose the station circulation
- Treatment plan around the area
- Propose a mixed land use and higher densities
- Design the station as the primary element of the area

Next Semester ...

- Putting it all together
- Design of the TOD at the site
- Town Center + Inter-modal Transfer Station = TOD

■ COMMENTS? ...

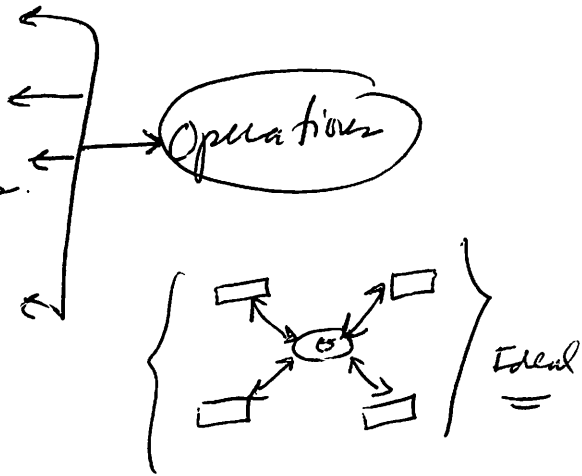
Anne Hertzberg - Thursday, June 10, 1999

Operations

- 6,000 employees
- 150 routes
- Budget: \$1 billion / year
- Unions are stronger (pay increases - Negotiations)
 - 8 hours + premium
 - Part-time 6h pay - 6h work
 - Full benefit package for part time operators
 - Legislative change
- Rush Hour: 4 minute headway
- Dispatchers manage the service - Quality of Service depends upon Training and Experience

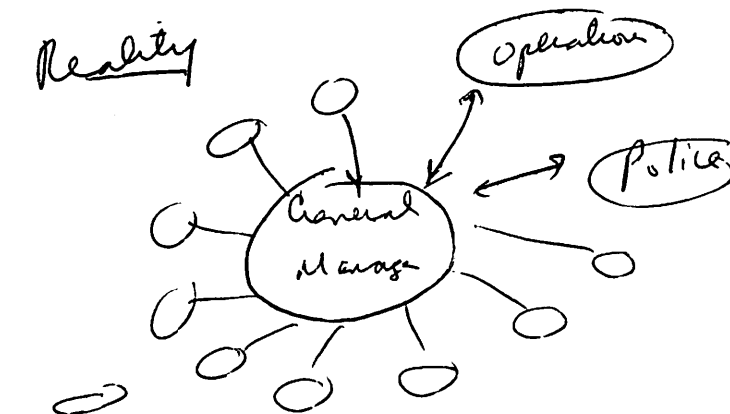
Construction

- Budget & Treasurer Controller
- Human Resources & Labour Relations
- Law



- 1) Bus Accidents
- 2) Legal Issues with Contractors

Reality



- Police
- Accounting
- Budget
- Marketing
- Organizational Diversity

History of vehicle performance
 ↳ 7 years of data are legally entitled to save - the rest you can throw it away

Issues → ① Money \$\$\$
 ② Politics.
 ③ Hiring part-time operators.

Dignity in the Work Place
 ↳ \$5 million

- | | |
|---------------------|--------------------|
| Program Development | Revenue Collection |
| Purchasing | Planning |
| Real Estate | Public Affairs |
| Safety | |