Pedestrian and Bicycle Facilities in Transit Oriented Development
Lessons Learned from Higher Density Residential Development in Austin, Texas

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What is TOD?

- Transit Oriented Development involves residential and commercial centers with highest densities near a transit facility and tapered densities within \( \frac{1}{4} \) to \( \frac{1}{2} \) mile.

- Pedestrian and bicycle facilities usually included, and encourage walking, cycling, and transit use.

http://www.ci.austin.tx.us/smartgrowth/images/
TOD Requirements & Facilitators

- Regional population and economic growth
  - Leads to housing demand
- Appropriate zoning and land use policies
- Community support
- Long-term regional planning process
- Public sector involvement or public-private partnerships
- Developer tax/permitting/financing incentives and density bonuses
Desired Transit System Characteristics

- Permanence
- Reliability
- Convenience
- Availability
- Positive image
- Flexibility
- Low emissions

Most important for TOD
What is Bus Rapid Transit (BRT)?

- Fast, convenient priority bus service designed with similar features to rapid rail transit

- Features (definition):
  - High frequency/capacity, all day service
  - Stations
  - Bus lane dedication or exclusive right-of-way
  - Off-vehicle fare collection
  - Intelligent Transportation Systems (ITS) - such as signal preemption, passenger info, vehicle location
  - Distinctive, easy-to-board vehicles (may be Diesel, CNG, or electric)
Research questions

- In what ways can bus transit (express or BRT) provide service equal to that of light rail (LRT)?
- How can bus transit interact with other factors to make TOD happen?
- How well do bus-served TODs work (how many residents use transit)?
- What level of bicycle and pedestrian infrastructure is provided with this type of land development?
An American Example: Austin, TX

Setting:
- Medium-sized city
- State capital
- Home to University of Texas

Event:
- Extensive apartment development along UT Shuttle routes in SE Austin
Questions

- To what degree does the shuttle service qualify as BRT?
- To what degree does the development on the shuttle routes qualify as TOD?
- What factors contributed to this development?
- Is the Austin experience transferable?
Austin’s Transit System Features

- UT Shuttle an express bus service
- Vehicles distinctly marked (different color from main line buses)
- Fast boarding due to student ID “payment” of fare
- Frequent and evening service (incl. E-Bus)
**TOD Features**

- Higher residential densities (three-story apartment complexes)
- All apartment complexes served by UT Shuttle bus routes - and a high level of transit use (to UT campus)
- However, a high level of parking and limited bike and pedestrian facilities
- Mixed use zoning but not land use on Riverside Avenue
## Factor Summary — Transit

<table>
<thead>
<tr>
<th>Transit service</th>
<th>Availability</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Yes - frequent all-day service</td>
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</table>

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Frequent all-day service but no separation from other traffic (running ways)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience</td>
<td>Frequent all-day service, fast boarding, but no ITS</td>
</tr>
<tr>
<td>Positive Image</td>
<td>Frequent all-day service, somewhat distinctive vehicles, no ITS, no stations</td>
</tr>
<tr>
<td>Permanence</td>
<td>No stations or running ways, but history of shuttle-apartment coordination</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Yes - demand-based route changes</td>
</tr>
<tr>
<td>Low Emissions</td>
<td>No - standard diesel vehicles</td>
</tr>
</tbody>
</table>
## Factor Summary – City/Land Use

<table>
<thead>
<tr>
<th>City/region characteristics</th>
<th>Population growth</th>
<th>Yes - throughout 1990s</th>
</tr>
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<tbody>
<tr>
<td>Economic growth</td>
<td>Yes - throughout 1990s</td>
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<table>
<thead>
<tr>
<th>Land use policy</th>
<th>Coordinated regional land use-transportation planning</th>
<th>No - no formal TOD policy until end of 1990s</th>
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<tbody>
<tr>
<td>Appropriate local zoning</td>
<td>Yes - multifamily zoning present (and mixed use zoned but no LU nearby)</td>
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## Factor Summary — Other Factors

<table>
<thead>
<tr>
<th>Other TOD-aiding factors</th>
<th>Public sector involvement*</th>
<th>None</th>
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</thead>
<tbody>
<tr>
<td>Developer incentives</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Public-private partnerships</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Community support/opposition</td>
<td>None (other than large student population in already-MF-zoned area)</td>
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<tr>
<td>Developer momentum</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Stable renter population</td>
<td>Yes (students) - in addition to regional population and economic growth</td>
<td></td>
</tr>
<tr>
<td>Type of development (TOD?)</td>
<td>Not strictly TOD, but has high density and convenient transit characteristics of TOD</td>
<td></td>
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</table>

* (Public sector involvement in land assembly/redevelopment/policy)
Special Factors in Austin

- Few or no developer incentives
- No government involvement
- No mixed uses and few ped/bike facilities
- High level of transit use (for campus trips)
- Strong demand for affordable student housing
Lessons for future bus-related land development in the US

- Have appropriate demographic groups (renters, students, etc.)

- Find additional factors necessary to ensure provision of an environment conducive to walking and cycling
  - Mix land uses and involve community/local government/agencies?

- Housing demand and desirable economic conditions must be present
Thank you for your attention!

Questions and comments welcome!
References

- Austin, City of. *University Commons Development Permit Application Site Plan*. City of Austin, Austin, TX, 1997.
- Copelin, L. *Audit: Cap Metro is too expensive*, in *Austin American-Statesman*. Austin, TX, 1997. P. A1
- Department of Neighborhood Planning and Zoning, City of Austin. *East Riverside/Oltorf Combined Neighborhood Plan*. City of Austin, Austin, TX, 2006.
Personal interviews

- University of Texas: Bob Harkins, Colleen Stoll (UT Shuttle services)
- Capital Metro: Roberto Gonzalez, Dottie Lancaster, Lucy Galbraith
- University Commons: Mike Gesch
- University of North Texas: Joe Richmond (formerly Capital Metro)
- City of Austin: Greg Guernsey, Melissa Schardt, Sonia Lopez, George Adams
- Capstone Development Corp: Rob Howland

Acknowledgments

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