Transit and Sustainable Urbanism: Shelley Poticha & Hank Dittmar
CTOD/Reconnecting America
The Center for Transit Oriented Development

- A project of Reconnecting America in collaboration with Center for Neighborhood Technology, Strategic Economics and local partners. Exec Director: Shelley Poticha

- A collaborative, performance based approach to making TOD succeed

- Create a national marketplace for TOD, working with transit operators, developers, investors and communities.

- “Bring TOD to scale” in 4-5 metro regions

- [http://www.reconnectingamerica.org](http://www.reconnectingamerica.org)
Principles for Making Transit Compete

To succeed, passenger transport must emulate the qualities associated with the auto: frequency, reliability, speed, convenience, & ease of use.
Frequency

Next to accessibility, most important factor is frequency of service. Goal is service frequencies that don’t require reliance on schedules.
Reliability

This may be the Achilles heel of the car, as incident related congestion reduces predictability of the commute.

Means that transit must separate itself from the auto environment where possible.
Finding and promoting corridors where public transport can better the auto in travel time while providing a less stressful environment is effective.

Transit prioritization, separated guideways, reduced transfers all are strategies here.
Convenience

- Stations should be accessible to the pedestrian, inviting.
- Rider serving amenities near station reduce need to drive: child care, groceries, cleaners.
Ease of Use

- Accessible fare instruments: U pass, annual pass, available through employers.
- Low-floor vehicles, identifiable stops.
- Fixed guideways reduce uncertainty
Individualized marketing

Western Australia is a leader with TravelSmart; Australian Greenhouse Office has promoted concept.

Getting to households at key points to offer individualized information about travel choices.
A note about modes

- Much time is wasted in the debate about bus or rail: both are needed, and it depends on setting.

- If goal is development impact, developers want competitive travel time, identifiable station, high quality design.
## Transit Modes and Applications

<table>
<thead>
<tr>
<th>Mode</th>
<th>Application &amp; Setting</th>
<th>Station Spacing</th>
<th>Technology</th>
<th>Examples</th>
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</thead>
<tbody>
<tr>
<td>Rail Rapid Transit</td>
<td>Fully grade separated up to 80 mph</td>
<td>High density corridors</td>
<td>Electric</td>
<td>MARTA in Atlanta, BART in Bay Area, CTA, Washington Metro</td>
</tr>
<tr>
<td>Ferry Overwater transit</td>
<td>25-40 knots</td>
<td>Crossing river, Bay</td>
<td>Diesel, wave jet</td>
<td>Golden Gate Ferry, Washington State Ferry</td>
</tr>
<tr>
<td>Commuter Rail Rail loco motive, rail ROW</td>
<td>up to 100 mph</td>
<td>Suburban to center city</td>
<td>Diesel, Electric, Dual Mode</td>
<td>SEPTA, Philadelphia METRA, Chicago Caltrain, SF Bay Area</td>
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<tr>
<td>Light Rail</td>
<td>Self propelled rail car in both segregated right of way and street running.</td>
<td>Wide variety of applications: urban to suburban</td>
<td>Electric, DMU</td>
<td>Sacramento, Portland, Salt Lake City, Boston green line</td>
</tr>
<tr>
<td>Streetcar / Tram</td>
<td>Self-propelled car running in street, both modern and vintage</td>
<td>Downtown, urban circulators</td>
<td>Block to block</td>
<td>Portland Streetcar F Line, San Francisco, Memphis</td>
</tr>
<tr>
<td>Bus Rapid Transit</td>
<td>Less dense environments, urban to suburban, may be a building block to rail</td>
<td>Limited stations, short to long</td>
<td>Diesel, Natural Gas</td>
<td>Brisbane, Pittsburgh Silverline, Boston</td>
</tr>
<tr>
<td>Bus Transit</td>
<td>Rubber-tired vehicles on fixed routes with exclusive land or separated roadways (busway)</td>
<td>All settings, a workhorse of transit, connection to rail or BRT, local transportation</td>
<td>Diesel, Natural Gas Buses</td>
<td>Most cities</td>
</tr>
<tr>
<td>Para transit</td>
<td>Small vans operating on a demand responsive basis, often for specialized services</td>
<td>Suburban or rural environments, or for specialized transportation</td>
<td>On-demand</td>
<td>Vans</td>
</tr>
</tbody>
</table>
Network Coverage is Key

Four Transit Systems Shown at the Same Geographical Scale

New York - Extended (962 Stations)
Washington DC - Large (163 Stations)
Cleveland - Medium (50 Stations)
Denver - Small (30 Stations)
Fitting Transit into the City: technology and alignment options & implications for urbanism

- Urban subway
- Segregated guideway:
  - at grade
  - freeway alignment
  - elevated
- Street running:
  - Center
  - at edge
  - On one side
Urban Subway

- Suitable for downtown areas, very expensive
- Entrance is just a stairway on the street
- Can be integrated into buildings
- Separated from traffic, can be faster, less conflict
- More expensive
- Less accessible, less suited for local circulation -- usually railroad ROW -- may not be in dense areas
- Works well in suburban locations, and where rail right of ways is available
- Faster running time
- Cheaper land
- Freeways not very compatible with town centers, pedestrians
- Most suitable for commuter rail, access to suburbs

Freeway Alignment
- Elevated guideways are an intrusion into the urban form
- Stations can be seamless: just another storefront

Elevated Guideway
Options for Street Running

Source: Trimet, Portland Mall Study, 2003
- Allows creation of station areas, requires a lot of street width
- Pedestrians must cross through traffic to get to stop
- Downtown to suburban

Street Running in Center Alignment
Street Running, Either Side Alignment

- Better transit-pedestrian interface
- Most suitable for downtown urban circulation where access trumps speed
Street Running, One Side Only

- May reduce confusion with auto traffic
- Simplifies pedestrian crossing
- Works well to increase speed outside downtown, amounts to separated guideway
## Accommodating Transit throughout the Region

<table>
<thead>
<tr>
<th></th>
<th>Urban Downtown</th>
<th>Urban Neighborhood</th>
<th>Suburban Town Center</th>
<th>Suburban Neighborhood</th>
<th>Commuter Town Center</th>
<th>Neighborhood Transit Zone</th>
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<tbody>
<tr>
<td>Subway</td>
<td>XXX</td>
<td>XXX</td>
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<tr>
<td>Segregated Guideway: At Grade</td>
<td>XXX</td>
<td>XXX</td>
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<tr>
<td>Segregated Guideway: Elevated</td>
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<tr>
<td>Segregated Guideway: Freeway</td>
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<tr>
<td>Street Running: Center</td>
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<tr>
<td>Street Running: Either side alignment</td>
<td>XXX</td>
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<tr>
<td>Street Running: One side</td>
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Next Steps

- Create TOD complement for each transect zone, and link typology to transect for each street type.

- Develop a manual for transit/street/urban design interface, incorporating such issues as performance of different technologies (turning radius, stopping distance, operating speed), street performance for all classes of users (suggested by Peter Calthorpe.)

- CNU/CTOD transit and urban design summit/ Charter Council early 2005 to gather designers working with transit and urban design to develop common language, tools and frameworks for transit at all scales in the region.