How Pedestrian-Friendly and Transit-Friendly is Your Neighborhood?
The Neighborhood Transit Readiness Scorecard

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Today’s Presentation

- Should you really stick around for the rest of this session?
- What do we mean when we say “urban”?
- Influence of the “3 D’s” (Density, Diversity, Design) on transit usage and walking propensity
- Measuring the 3 D’s: How we did it & Results
- Using the Results in Community Decision-making
- Measuring the 3 D’s: How you can do it
- Discussion
Should I Stay or Should I Go?

- Anyone planning for pedestrian improvements
- Anyone interested in assessing the amount of mixed uses in their community
- Anyone trying to identify good locations for bus stops
- Anyone planning for transit-oriented development
What Do We Mean By “Urban?”

Can We Measure Urbanity?

- Buildings Near the Street
- Good Sidewalk Coverage
- Greater Densities Than Suburban Standards
- Gridded Street Network Instead of Hierarchy
- Reduced or “Tamed” Parking

High Number of Uses, Often Mixed Within One Structure
Station Area Analysis: The 3 D’s

Density
- Gross housing and employment per acre
- Primary base of ridership

Diversity
- Mix of uses
- Measure of convenience, access to daily necessities

Design
- Layout of the built environment
- Intersections, sidewalks, street widths, barriers
- The “bones” of the neighborhood
Density

Belmont Dairy ~ 34 DU/Acre

Highland Garden Village ~ 11 DU/Acre

Twinbrook ~ 61 DU/Acre

Project Profile: Twinbrook Station

- Twinbrook Station, Rockville, MD
- 26 acres
- Certified Plan, Stage 2
- Gold, 66 points
- Greyfield

Metric: Activity Intensity Measure (AIM)

AIM = (DU + Jobs/3.2)/Acre
Diversity

- Metric: Walkscore.com
- Distance to 13 Amenities
  - Grocery Stores
  - Restaurants
  - Coffee Shops
  - Bars
  - Movie Theaters
  - Schools
  - Parks
  - Libraries
  - Bookstores
  - Fitness
  - Drug Stores
  - Hardware Stores
  - Clothing & Music

Eighth & Pearl, Boulder, CO: 95
W. Lake St, Minneapolis, MN: 98
Carrboro, NC: 100
Design

- Metric: Intersections + Sidewalk Density
  - (Intersections-Dead Ends)/mi²
  - (Sidewalk Miles)/mi²

Seattle, WA
Relative Weighting for Transit Travel

Recent Meta-Analysis by Ewing & Cervero:

- Density = 17%
- Diversity = 29%
- Design = 55%

Based on weighted average elasticities of transit usage

Highlights critical importance of “Good Bones”

Source: JAPA, 76:3, pp. 265-294
Relative Weighting for Walking

Recent Meta-Analysis by Ewing & Cervero:

- Density = 11%
- Diversity = 25%
- Design = 64%

Based on weighted average elasticities of walking

“Good Bones” even more important

Source: JAPA, 76:3, pp. 265-294
Assembling the Scorecard

Final Score

- Generated by obtaining grade for each metric, then calculating final GPA using *TRANSIT* weighting factors

- Does NOT include other important but difficult to quantify measures:
  - Continuous urban fabric - Inter-neighborhood connectivity
  - Assessment of demographics, travel markets
  - Built environment details - streetscaping, bike paths, sidewalk conditions, lighting, crime rates, grades, congestion levels, crosswalks, etc.
# Data Analysis Example - Downtown Cary

## Tier 2

### Aggregate Grading

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**Final Grade**: C

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Tier 2 - Density

East 54
- Density Grade: D-
- 2035 AIM = 2.5
- DU = 249; Jobs = 1,075

Alston Avenue
- Density Grade: C-
- 2035 AIM = 5.8
- DU = 2,398; Jobs = 2,469
Tier 2 - Diversity

East 54
- Diversity Grade: C
- Avg. Walkscore = 51

Alston Avenue
- Diversity Grade: C+
- Avg. Walkscore = 62
East 54
- Design Grade: D-
  - 31 Intersections/mi²
  - 8 Sidewalk Miles/mi²

Alston Avenue
- Design Grade: B-
  - 122 Intersections/mi²
  - 14 Sidewalk Miles/mi²
Tier 3 - Density

TMC
- Density Grade: D+
- 2035 AIM = 6.7
- DU = 1,738; Jobs = 4,080

NC State
- Density Grade: C
- 2035 AIM = 10.6
- DU = 895; Jobs = 14,320
Tier 3 - Diversity

TMC
- Diversity Grade: C
- Avg. Walkscore = 53

NC State
- Diversity Grade: B
- Avg. Walkscore = 74
Tier 3 - Design

TMC
- Design Grade: F
- 15 Intersections/mi²
- 3 Sidewalk Miles/mi²

NC State
- Design Grade: B-
- 89 Intersections/mi²
- 23 Sidewalk Miles/mi²
Scorecard

- Full Analysis
  - 27 Total Stations on “Primary Corridor”
  - Full Mile Radius
  - 6 Total Maps, 2 Detailed Analysis Reports

- Score Only
  - 15 Stations of Interest
  - Half-Mile Analysis only
  - 3 Total Maps

- 42 Total Stations:

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Additional Stations
- Carolina North
- Downtown Apex
- Downtown Carrboro
- Downtown Chapel Hill
- Downtown Morrisville
- Downtown Raleigh (Core)
- Glover Road
- McCrimmon Parkway
- NC Central University
- NERC
- Park West Village
- RDU
- Southern Village
- Veridea
- Wake Med (New Bern)
# Scorecard - Tiers 3 & 4

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<th>Station</th>
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Now What? Possible Scorecard Uses

- **Deficiency Analysis**
  - Finding breaks/barriers in pedestrian networks
  - Locating under-performing areas zoned for mixed-use

- **Travel Forecasting**
  - Providing additional tools to support traditional transit ridership forecasts

- **Education**
  - Explaining differences between development intensities, variations in land use mix, urban design to policymakers
  - Identifying potential transit markets
How You Can Do This

Data Needs: Density
- Jobs/Population by some geography: Census Block, Block Group, Tract, TAZ
- Source: Census 2000, Regional/Local Datasets

Data Needs: Diversity
- Walkscores geocoded as points
- Source: walkscore.com, your GIS system

Data Needs: Design
- Intersections in GIS
- Sidewalk coverage shapefiles
Scorecard: What’s Next?

- Further exploration with new light rail installations
- Dealing with the other D’s:
  - Destination Access
  - Demand Management
  - Distance to Transit
Implications for Planners

- With Design by far the most powerful of 3 D’s...
  - Maximizing transit system usage or pedestrian activity may mean concentrating investments in places where design is ALREADY high-performing or can be “healed” for a reasonable level of public/private investment

- With Diversity Twice as Powerful as Density
  - Consider replacing single-use commercial districts with mixed-use districts in development codes

- The Bottom Line
  - You can rezone for different uses
  - You can permit more density through redevelopment
  - But get the streets right THE FIRST TIME
Thank You!

Questions & Discussion