Urban Revitalization: Changing Atlanta’s Land Use Intensities

12th IUPEA Symposium
SESSION T2.7
Thursday, June 2, 2016

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Agenda

Background
Approach
Results
Conclusions
Background
Background

Beltline History

Images sources (left to right): Harper’s Weekly (1887, public domain); Gravel (1999)
Atlanta BeltLine Eastside Trail Before (left) and After (right) Rail-to-Trail Conversion

Source: Atlanta Beltline, Inc. (2016a)
Legend
- MARTA Rail Lines
- Interstate Highway
- Principal Arterial
- Minor Arterial

Beltline Trails
- Planned
- Operating

Parks
- Existing
- Planned by BeltLine

Source: Created by authors
Tax increment financing (TIF)

- **Positive effects on dev’t:** severe blight, low density, large area, near CBD, industrial focus (Byrne, 2006)
- **Negative effects:** Retail focus (Byrne, 2009)

Speculative housing price increases around the BeltLine before construction (Immergluck, 2009)

**Research Question:** Is the Atlanta BeltLine generating revitalization around its completed sections?
Approach
Approach

**Step 1**
Designate study groups (operating, planned, inside, outside)

**Step 2**
Designate multiple revitalization metrics

**Step 3**
Collect data for metrics

**Step 4**
Perform paired t-test to examine absolute growth

**Step 5**
Perform one-way ANOVA to examine differences

**Step 6**
Synthesize findings for conclusions
Step 1: Study Zones

Legend
- Beltline Trails
  - Planned
  - Operating
  - Overlay District
  - Interstate Highways
  - Other Block Groups

Location_Quadrant
- Eastside
- West End
- Northside
- North Planned
- South Planned
- West Planned
- Inside
- Outside

Operating
Planned
Inside
Outside
Steps 2 and 3: Metrics and Data

2010

American Community Survey 2010 (5-year)

Population
Population Density
Per Capita Income
Housing Units
Vacancy Rates
Average Rents
Year Built (mean)

LEHD 2010

Retail employment
Total employment

2014

American Community Survey 2014 (5-year)

Δ, %Δ

Revitalization Metrics
### Approach

#### Steps 4 and 5: Tests

<table>
<thead>
<tr>
<th></th>
<th><strong>Paired T-Test</strong></th>
<th><strong>One-Way ANOVA</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Absolute change</strong></td>
<td>( P \leq 0.05 )</td>
<td>( P \leq 0.05 )</td>
</tr>
<tr>
<td>( \text{yes} )</td>
<td>( \uparrow )</td>
<td>( \text{yes} )</td>
</tr>
<tr>
<td>( \text{no} )</td>
<td>( \uparrow )</td>
<td>( \text{no} )</td>
</tr>
<tr>
<td><strong>Relative change</strong></td>
<td>( \text{Change} ) ( (+/-) )</td>
<td>( \text{Change} ) ( (+/-) )</td>
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<td>( H_0 )</td>
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<td>( H_0 )</td>
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</tbody>
</table>
Results
### Analysis

#### Step 4: Absolute Change

<table>
<thead>
<tr>
<th>Grouping</th>
<th>N</th>
<th>% Δ, Pop.</th>
<th>% Δ, Pop. Density</th>
<th>% Δ, Per Capita Income</th>
<th>% Δ, Housing Units</th>
<th>Δ, Vacancy Rate (% points)</th>
<th>Δ, Median Year Built</th>
<th>% Δ, Average Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All block groups</td>
<td>356</td>
<td>0.015 (+)</td>
<td>0.380</td>
<td>0.003 (-)</td>
<td>0.802</td>
<td>0.932</td>
<td>0.172</td>
<td>0.000 (+)</td>
</tr>
<tr>
<td>Operating</td>
<td>41</td>
<td>0.005 (+)</td>
<td>0.035 (+)</td>
<td>0.008 (-)</td>
<td>0.755</td>
<td>0.075</td>
<td>0.357</td>
<td>0.246</td>
</tr>
<tr>
<td>Planned</td>
<td>47</td>
<td>0.309</td>
<td>0.471</td>
<td>0.031 (-)</td>
<td>0.313</td>
<td>0.518</td>
<td>0.271</td>
<td>0.005 (+)</td>
</tr>
<tr>
<td>Inside</td>
<td>44</td>
<td>0.136</td>
<td>0.501</td>
<td>0.104</td>
<td>0.086</td>
<td>0.563</td>
<td>0.140</td>
<td>0.380</td>
</tr>
<tr>
<td>Outside</td>
<td>224</td>
<td>0.397</td>
<td>0.422</td>
<td>0.390</td>
<td>0.041 (-)</td>
<td>0.399</td>
<td>0.001 (+)</td>
<td>0.006 (+)</td>
</tr>
</tbody>
</table>

*‘Operating’ includes ‘Eastside,’ ‘West End,’ and ‘Northside’

*‘Planned’ includes ‘North Planned,’ ‘South Planned,’ and ‘West Planned’

(+) indicates a positive change, and (-) indicates a negative change.

Bolded values: $p \leq 0.05$
### Step 5: Relative Change

#### One-way ANOVA Comparing Operating and Planned Segments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sum of Squares</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>% ∆, Pop.</td>
<td>0.32</td>
<td>1</td>
<td>1.27</td>
<td>0.26</td>
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<tr>
<td>∆, Pop. Density</td>
<td>2.E+06</td>
<td>1</td>
<td>2.00</td>
<td>0.16</td>
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<tr>
<td>∆, Per Capita Income</td>
<td>8.E+07</td>
<td>1</td>
<td>0.51</td>
<td>0.47</td>
</tr>
<tr>
<td>∆, Housing Units</td>
<td>1.E+04</td>
<td>1</td>
<td>0.42</td>
<td>0.52</td>
</tr>
<tr>
<td>∆, Vacancy Rate (% points)</td>
<td>0.05</td>
<td>1</td>
<td>3.21</td>
<td>0.08</td>
</tr>
<tr>
<td>∆, Median Year Built</td>
<td>5.E+04</td>
<td>1</td>
<td>1.01</td>
<td>0.32</td>
</tr>
<tr>
<td>∆, Average Rent</td>
<td>8.E+03</td>
<td>1</td>
<td>0.07</td>
<td>0.80</td>
</tr>
</tbody>
</table>

*na: Not applicable*
Conclusions
Conclusions

Lack of confirmation of BeltLine-induced growth

Possible Explanations
• No effect
• Statistics
• Temporal precedence or lag
• Spatial concentration

Future Research Directions
Thank you
References
References


Backup
Background

Sustainable Development

Sustainable Development involves economic, technological, and social factors (Bugliarello, 2006).

Compact development:
- Energy and transportation requirements (Bürer, Goldstein, & Holtzclaw, 2004; Ewing, Pendall, & Chen, 2002; Handy, 2005)
- Characteristics (Ewing, 1997)

Map produced on March 28, 2016:
Centers for Quality Growth and Regional Development, Georgia Institute of Technology
Data from: Beverly Cool Chesseto
Figure 3: Normalized Assessed Taxable Property Values – 2016
Source: Created by the authors from data available from the Fulton County Government (2016)
Analysis

Retail Employment

Retail Employment Density

Year


Retail Employees per Sq Km

- 20 40 60 80 100 120 140 160 180

Operating  Planned  Inside  Outside

[Graph showing retail employment density over years with different categories: operating, planned, inside, and outside.]
Analysis

All Employment

Employment Density

For legibility, ‘Inside’ is omitted because values are several times higher than for other categories.