Dollars and $ense of Smart Growth – Add it up!
Building Better Budgets
A National Examination of the Fiscal Benefits of Smart Growth Development

May 2013
Your Dollars and Policies at Work

Policy Implications
• Better land use and transportation planning
• Taxpayer fairness
• Establish as routine component of planning and development approvals

Economic Implications
• Better “asset” management
• Plan for growth and costs in efficient ways
• Do more with less, and more with more
The Issue

- Revenue side of fiscal impact has been identified – “Do the Math!”
- Local Government currently invests in necessary infrastructure and services – The Costs
- Yet we still don’t know how density and location of the built environment impacts revenues and costs – “Add it Up!”
The Issue

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Our Hypothesis – Add It Up!

• Question: How do costs of infrastructure and services change where density and connectivity is higher or lower?
  – Hypothesis: Expenditures will be more efficient in denser, better connected areas.
## What Variables to Add Up?

<table>
<thead>
<tr>
<th>Services &amp; Infrastructure</th>
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</thead>
<tbody>
<tr>
<td>Fire</td>
</tr>
<tr>
<td>Police</td>
</tr>
<tr>
<td>Schools</td>
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<tr>
<td>Libraries</td>
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<td>Hospitals</td>
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<td>Parks</td>
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<tr>
<td>Waste</td>
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<tr>
<td>Roads</td>
</tr>
<tr>
<td>Stormwater</td>
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<tr>
<td>Sewer and Water</td>
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</tbody>
</table>
### Services & Infrastructure Dependent on Density, but…

<table>
<thead>
<tr>
<th>Service</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire</td>
<td>Yes</td>
</tr>
<tr>
<td>Police</td>
<td>Not Yet</td>
</tr>
<tr>
<td>Schools</td>
<td>Bus transportation</td>
</tr>
<tr>
<td>Libraries</td>
<td>No</td>
</tr>
<tr>
<td>Hospitals</td>
<td>No</td>
</tr>
<tr>
<td>Parks</td>
<td>No</td>
</tr>
<tr>
<td>Waste</td>
<td>Collection, not processing</td>
</tr>
<tr>
<td>Roads</td>
<td>Yes</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Yes</td>
</tr>
<tr>
<td>Sewer and Water</td>
<td>Yes</td>
</tr>
</tbody>
</table>
## Where We Added it Up

<table>
<thead>
<tr>
<th>Location</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison, Wisconsin</td>
<td>HUD</td>
</tr>
<tr>
<td>West Des Moines, Iowa</td>
<td>HUD</td>
</tr>
<tr>
<td>Dona Aña County, New Mexico</td>
<td>HUD/RCLCO</td>
</tr>
<tr>
<td>Nashville, Tennessee</td>
<td>RCLCO</td>
</tr>
</tbody>
</table>
How We Add Up

DENSITY

route employees
cost length students
zone size call
miles Response
times shed bus
frequency pipe
walk per
area service
Apparatus
road
Road Length and Area per Capita Decreases as Density Increases

Samples from City of Madison

Suburban Residential
- Residents: 178
- Employees: 5
- Total: 183
- Total Res. & Emp Per Acre: 4.6
- Total Road Length: 5,435
- Road Length per Capita: 30 ft.

Downtown Urban
- Residents: 2236
- Employees: 633
- Total: 2,869
- Total Res. & Emp Per Acre: 71
- Total Road Length: 8,941
- Road Length per Capita: 3.1 ft.

NOTE: Chart shows road length only. Road area per capita has a similar relationship to density.
Per Pupil Transportation Costs Decline as Pupil Density Increases

**FY 2013 School Transportation Costs and Pupil Density by School District in Wisconsin**

The graph shows a negative correlation between transportation costs per student and pupil density, with the equation $y = -84.11 \ln(x) + 798.36$ and $R^2 = 0.81794$.

**SOURCE:** Wisconsin Dept. of Education

**NOTE:** Points represent average costs for districts within density categories.
Madison – Preliminary Results

Estimated Annual Net Fiscal Impact per Acre

Low Density  Base Scenario  Compact  "Plus 50"  Compact "Plus 50"

City of Madison  Madison Metropolitan School District
West Des Moines – Preliminary Results

Net Fiscal Impact per Acre by Scenario

- Low Density
- Base Density
- Higher Density
- Walkable Urban

City of West Des Moines
West Des Moines School District
Doña Ana County Comprehensive Plan – Preliminary Results

Estimated Net Fiscal Impact per Acre vs. Residents and Employees per Acre

- City Center
- City Neighborhood
- Suburban
- Town
- Village
- Small Village
- Rural Subdivision
- Homestead
Nashville – Preliminary Results

Scenario densities similar to...

- Walkable Urban
- High Density
- Base Program
- Low Density

Net Fiscal Impact per Acre

- $2,400
- $2,600
- $2,800
- $3,000
- $3,200
- $3,400
What Did We Learn When Adding It Up?

• Preliminary results support the hypothesis
• However,
  – Order of magnitude varies greatly
  – Not enough samples for conclusive findings
  – Data collected is not organized for this level of analysis --
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• However,
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communities are currently not in a position
to know costs based on land use patterns
Our model doesn’t necessarily capture all relevant functions of local government (e.g., police, hospitals, libraries, parks . . . )

Data limitations impede ability to fully deploy the model

Need to look at variables in addition to density and transportation: Household income, crime, education, demographics, etc.
How can we create a system to better organize data?

Better understand how certain cost/revenue allocations work at the local level

- Resident/employee allocation, road usage, response time policy, etc.
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Better understand how certain cost/revenue allocations work at the local level

- Resident/employee allocation, road usage, response time policy, etc.

Would you like us to add up your community?

- See us after the session
Add It Up

Thank you to:
Erin Talkington, RCLCO
Margaret Liddon, RCLCO
Patrick Lynch, Smart Growth America

~●~

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