Web-Based Fiscal Impact Modeling: What’s been done & what’s coming next

Della Rucker, AICP, CEcD  Wise Economy Workshop
Doug Walker, Placeways LLC
Chris Haller, Urban Interactive Studio
Today’s agenda

- What is Fiscal Impact Analysis?
  - Why do it?
  - How does it work?
  - Models vs. Studies

- Two Models: OKI and New Hampshire
  - What worked
  - What didn’t

- What’s on the horizon
The big Q:

“Is growth good or bad for the tax base in my community?”
Well…
Are the revenues generated by new growth enough to cover the service and facility demands it will create?
Two methods:

- Average costing or per capita multiplier method

\[
\text{AVG} \times \text{New} = \text{FI}
\]

- Marginal costing method
Analysis

Model
but....

- Does not directly calculate economic impacts (job creation, multiplier effects, etc.)

- Does not calculate fiscal impacts resulting from multiplier effects.

- Does not account for non-fiscal impacts of development.
It’s not a be-all and end-all
Early Models

- Florida Fiscal Impact Analysis Model
- FISCALS Model (TischlerBise)
- Federal Reserve “FIT” model
- Hennepin County, Minnesota
- Georgia Tech's WebFIT
- Penn–State “CIM–PSU”
- Kentucky Department for Local Government (now GOLD) “Fiscal Impact: Subdivision & Annexation Review”
Early Models had in common...

- Excel based
- Regional
- Simple
- Black box

Tvtropes.org
The Fiscal Impact Analysis Model:

Ohio–Kentucky–Indiana Regional Council of Governments (OKI)
Why?

Strategic Regional Policy Plan

OKI Land Use Commission
Adopted April 14, 2005
What did they want?

- Compare alternative development scenarios and specific project-level development
- Provide accurate and useful results
- User friendly
- Include locally-provided data
- Adapt to entire OKI region
How does it work?
The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) has developed a Fiscal Impact Analysis Model to give decision makers a better understanding of the budgetary implications of land use change. Information generated from the model will help local governments better understand the revenues and costs associated with new development and the jurisdiction’s ability to provide public facilities and services. For more information about the Model click here.

Interested in Using the Model? The Fiscal Impact Analysis Model is intended for use by communities in the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) region. Use of the Model is currently available to OKI jurisdictions that have provided their data to the Model. For more information on partnering with OKI to use the Fiscal Impact Analysis Model the Regional Planning Manager at 513-621-6300.

The OKI Fiscal Impact Analysis Model is intended to provide general guidance about potential fiscal impacts of land use change in specific areas of the OKI region but it does not purport to provide exact revenues or costs and cannot take into consideration all of the unique factors that may affect any particular unit of government or development. The user assumes sole responsibility for determining the suitability of the Model for each application and for evaluating the output. OKI assumes no responsibility for any governmental actions taken in connection with any proposed land use change evaluated with the Model. The Model is still undergoing refinements and is subject to change without notice.

EMAIL OKI ADMINISTRATOR
HELP?
What did we have to work with?

Governments galore
Dizzifying Data

- Local budgets
- Local-ish parcel data
- Data discrepancies
- Data suppression

Do the numbers we need exist?
What we did

INDEPENDENT VARIABLES
Population
Traffic volumes
Employment
…etc.

LAND USE

DEPENDENT VARIABLES
Budgets
Revenues and Expenditures

$/Unit

REVENUE & EXPENDITURE
## Land Use Categories: Why so weird?

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Retail C1** | Neighborhood Shopping Center  
This category includes small structures, or groupings of small structures designed for retail use, typically around 50,000 square feet in size on three to ten acres. Includes recreational facilities of similar size. Customers come and go irregularly throughout the day. Include uses such as drug stores, clothing stores, merchandising, beauty shops, laundry-mats, and other personal services and specialty retail venues. |
| **Retail C2** | Community Shopping Center  
This category includes discount stores and community shopping centers including big box stores, car dealers and other regional-scale shopping venues. Buildings or groupings of buildings are generally around 150,000 square feet on ten to thirty acres. Customers come and go irregularly throughout the day. Include uses such as automotive sales and rental, furniture stores, home centers, department stores, recreation and entertainment. |
| **Retail C4** | Sit Down Restaurants  
This category includes commercial establishments that provide prepared food or food-and drink-related entertainment for consumption on site. Buildings are generally freestanding. This category excludes drive-in or drive-through businesses. Peak hours for customers are generally meal times. |
| **Retail C5** | Hotels & Motels  
This category includes hotels and motels providing temporary lodging for Customers. This category includes all related facilities on site (meeting rooms, restaurants, etc). Customers come and go on an irregular basis. |
| **Retail C6** | High Traffic Retail  
This category includes establishments that derive a large portion of business from drive-in or drive-through customers, such as convenience stores, gas stations and fast food restaurants. Customers come and go at all hours of the day. |
| **Office C1** | Office  
General office uses and funeral homes. |
| **Office C2** | Consumer oriented office  
Offices with large volume of short visits (i.e. medical offices, banks and saving institutions). |
<table>
<thead>
<tr>
<th>OfficeC1</th>
<th>Ind1</th>
<th>Ind2</th>
<th>EdGov</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUNERAL HOME</td>
<td>RETAIL OFFICE/WHSE</td>
<td>MFG OR ASSEMBLY</td>
<td>CITY OWNED PROPERTY</td>
</tr>
<tr>
<td>OFFICE BLDG 1 OR 2 STORY</td>
<td>SELF STORAGE WAREHOUSES</td>
<td>MFG OR ASSEMBLY 100,000</td>
<td>COUNTY OWNED PROPERTY</td>
</tr>
<tr>
<td>Office Apartments Over</td>
<td>Manufacturing&amp; Assembly, Light</td>
<td>MFG OR ASSEMBLY 25,000-</td>
<td>DAY CARE CENTER</td>
</tr>
<tr>
<td>Office Retail Over</td>
<td>Small Shop - Machine, Tool, Etc.</td>
<td>TRUCKING TERMINAL</td>
<td>FIRE STATION</td>
</tr>
<tr>
<td>Office Storage Over</td>
<td>Marine Service Facilities</td>
<td>Coal Lands - Surface Rights</td>
<td>GOVT PUBLIC BLDG</td>
</tr>
<tr>
<td>Funeral Home</td>
<td>WAREHOUSE</td>
<td>Other Minerals</td>
<td>SCHOOL</td>
</tr>
<tr>
<td>Office Building, 1 &amp; 2 Stories</td>
<td>WAREHOUSE 1,000-20,000</td>
<td>Food &amp; Drink Processing</td>
<td>Day Care/Private School</td>
</tr>
<tr>
<td>Office Building, 3+ Stories Walk-up</td>
<td>WAREHOUSE 100,000 + SQ FT</td>
<td>Foundries &amp; Heavy Manufacture</td>
<td>Exempt Property United States</td>
</tr>
<tr>
<td>Office Building, 3+ Stories w/ Elevator</td>
<td>Industrial Warehouses</td>
<td>Manufacturing &amp; Assembly, Medium</td>
<td>Exempt Property State of Ohio</td>
</tr>
<tr>
<td>Condo Business</td>
<td>Warehouse Multi-Tenant</td>
<td>Industrial Truck Terminals</td>
<td>Exempt Property County</td>
</tr>
<tr>
<td>Dwelling Used as Office</td>
<td>Mini Warehouse</td>
<td>Mines &amp; Quarries</td>
<td>Exempt Property Township</td>
</tr>
<tr>
<td>Retail Office Over</td>
<td>Commercial Warehouses</td>
<td>Grain Elevators</td>
<td>Exempt Property Municipalities</td>
</tr>
<tr>
<td></td>
<td>Commercial Mini-Warehouses</td>
<td>Other Industrial Structures</td>
<td>Exempt Property Board of Education</td>
</tr>
<tr>
<td>Retail Storage Over</td>
<td>Commercial Truck Terminals</td>
<td>Charitable Exemptions</td>
<td>Other Exempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Community Urban Redevelopment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Community Reinvestment Area</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Municipal Improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Municipal Urban Redevelopment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other Tax Abatements</td>
</tr>
</tbody>
</table>
Other challenges:

“We can’t ask that!”

Schools es non grata

We know something you don’t know… and we gotta keep it that way.

You gotta pay to play.
Oh, and what happens when your web guys...
The Model today

- Not much building, so not much use.
- Membership only
- Data doesn’t age gracefully
- Priorities
But --

- Easy to use
- Robust results
- It works
- It helps.
NH Cost of Sprawl
costofsprawl.org
Doug Walker – Placeways
Chris Haller – Urban Interactive Studio
Origin

- New Hampshire Office of Energy and Planning

- “Simple tool for use by town and regional planners, elected officials, and interested community members who want to promote smart growth principles of municipal planning, efficient use of the state's natural resources, and cost-efficient development.”
Project

Objectives:

1. Accessible, user-friendly tool with realistic local cost data
2. Interactive tool for users to experiment with alternatives

Team: RKG Associates, Placeways, & Urban Interactive Studio
User Experience Design

Steve Krug

DON'T MAKE ME THINK

A Common Sense Approach to Web Usability

SECOND EDITION
Inspiration
How it works

- Video or Live Demo
What it’s doing

Fiscal Calculations

Spatial Calculations

Cost of Sprawl Model

User Inputs

Output Indicators
JavaScript/HTML Web Client

Fiscal Impact Model Equations

JavaScript Web App

JavaScript API

Map Services

ArcGIS® for Server
Fiscal Model

- Compile statewide cost database using primary and secondary sources
- Normalize results into standardized model
- Isolate sprawl-related factors
- Develop original model in Excel
- Translate into JavaScript
Geospatial Calculations

- Developable Land Area
  - Data
    - Land Use Classification
    - Elevation
    - Conservation Areas
  - Conditions
    - Undeveloped
    - Not water or wetland
    - Slope less than 20%
    - Not a conservation area
Geospatial Calculations

- Distance to Schools, Water, & Sewer
  - **Purpose**
    - Measure additional infrastructure costs for development
  - **Method**
    - ArcGIS® Network Analyst OD Cost Matrix to calculate network distance along roads to schools, water, and sewer
    - ArcGIS® Model Builder Iterator to select and calculate by county
Geospatial Calculations

- Distance to Existing Roads
  - Purpose
    - calculate external roads needed to develop in grid square
  - Method
    - Scenario 360™ function to calculate minimum distance from grid square edge to nearest road
Challenges to COS development

- Data, of course
- Choosing the right level of detail – tendency to do too much
- Adding a spatial perspective to old habits of thought
- Trade-offs of near-term time & cost vs. future portability and maintainability
Lessons Learned

- Sketch modeling is popular
  - Interaction is engaging & educational
  - Approximate results okay at this stage

- Original data collection is key

- Repeatability still a challenge
  - Cost structures are locally unique
  - Data collection
Lessons Learned

More to do
- Features and functions
- Fiscal model
- Developers’ ROI
- Bigger picture modeling
So What’s Coming Next?
Increasing demand for fiscal impact models

- Fiscal pressures
- Open Data
- Better analysis
But maybe not everywhere.
GIS – driven
Friendly interfaces
But can you be too friendly?
Can you repeat it?
Transparency...or else.
Thanks!

Della G. Rucker, AICP CEcD
Principal
Wise Economy Workshop
www.wiseeconomy.com
della.rucker@wiseeconomy.com
Tw: @dellarucker

Doug Walker
Principal
Placeways, LLC
www.placeways.com
doug@placeways.com

Chris Haller
Principal
Urban Interactive Studios
www.urbaninteractivestudios.com
Challer@urbaninteractive.com
Tw: @challer