THE NEW EDGE CITY
Critical Sustainable Forms

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Sustainability

- Is the most critical planning issue.
- Planners are picking the low hanging fruit.
Current Planning for Sustainability

- LEED from architects, not planners
  - Post-construction verification.
- Plant street trees (easy minor change).
- Green roofs (too little implementation).
- Walkability (sounds impressive but has little impact).
- Mixed use (poorly used and understood).
Inefficient Development Forms

• Most comprehensive plans are inefficient.
  • Sprawling strips of commercial and employment.
  • Low intensity cookie cutter development.
  • Little attention to environment – lip service.
  • Designed for automobile.
• Long resistance to more efficient forms.
  • Special procedure for cluster, PUD, or TND.
  • Cave into NIMBY’s.
Efficient Form Strategies

- Mandatory natural resource protection.
- Mandate clustering and planned developments. (Cookie cutter a conditional use).
- Convert Auto-Urban sprawl to:
  - Urban, mandated structured parking.
  - Urban core edge cities.
Massive Zoning Reform

- Resource protection:
  - Avoid or minimize (protection vs. mitigation).
- The vast majority of zoning is Euclidian.
  - Make Euclidian conditional.
  - Cluster and planned permitted by right.
- Replace Auto-Urban with Urban and Urban Core
  - Minimum FAR.
  - Mandatory structured parking.
Planners Have Failed for 50 Years

- McHarg promoted environmental protection late 60’s.
- Clustering – dates from 1950’s and 60’s.
- Concentration of growth in urban areas is even older.
- The need for structured parking is well known.
Resource Protection?

- Wetlands
  - Corps allows too much mitigation.
  - Mitigation of wetlands releases stored carbon.
  - Long time to store – mitigation often fails.
- Floodplains
  - Feds allow mitigation.
  - Natural vegetation disturbed.
- Woodlands
  - Mitigation plant trees for everyone disturbed.
  - Loss of carbon from cleared land.
Performance Zoning 1973-present

- Site capacity calculation.
  - Sets specific protection levels.
  - Calculates carrying capacity.
  - Avoids variances.
- Standards tied to natural cycles.
- Clustering does not penalize developers or land owners.
- Impacts of levels of protection can be modeled.
Clustering

- Better site planning.
- More efficient for developer than Euclidian.
  - No loss for small, irregular sites, or resources.
- More efficient in miles of roads and utilities.
- Increases gross density, saves land.
- Can be used as incentive for more protection.
Clustering Is More Sustainable

• Less run-off.
• More recharge.
• Less expensive mitigation.
• Less non-point pollutants.
• More trees and wetlands as carbon sinks.
• Less road miles to build and maintain.
• Less utilities miles to build and maintain.
• More greenways.
• More visual amenities.
Mandatory Clustering

• Clustering permitted by right.
  • Eliminates NIMBY opposition.
  • No special findings.
  • Incentive for greater clustering.

• Single-Family a Conditional Use.
  • Require carbon footprint similar to cluster or.
  • Pay carbon tax.
## Non-Point Loading

### Non-Point Loading – Middle Fork of Chicago River

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Additional Non-Point Loads (tons/year)</th>
<th>Reduction from Cluster</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Conventional</td>
<td>Cluster</td>
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<tr>
<td>BOD</td>
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<tr>
<td>Ammonia</td>
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<tr>
<td>Phosphorus</td>
<td>.57</td>
<td>0.06</td>
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</table>
Development Forms

- Single Family (20 du’s) OSR 0.00
- Cluster (20 du’s) OSR 0.30
- Conservation (20 du’s) OSR 0.50
- Preservation (20 du’s) OSR 0.80
Carbon Sequestering and Development Form

- Conventional Cluster
- Conservation Cluster
- Preservation Cluster
Incentive to Cluster

- Single Family (20 du’s): OSR 0.00
- Cluster (21 du’s): OSR 0.30
- Conservation (22 du’s): OSR 0.50
- Preservation (23 du’s): OSR 0.80
High Density Suburban Cluster
High Density Conservation

• Gross Density 6.32 du’s/ac.
• Open Space 55%
• Development Land 45%
  • Non Residential 10%
    • Retail-Office 60%
    • Mixed Use 40%
  • Residential 90%
    • Single-Family (10,000, 6,000, 4,000sf) 45%
    • Attached Single-Family 30%
    • Multi-Family (4 to 10 stories) 25%

Note: 10,000 sf. lots have gross density of 2.614 du’s/ac.
The Urban Dilemma
‘At Grade Parking’

Without Structured Parking – Urban is impossible.
## Floor Area (FAR) with at Grade Parking

<table>
<thead>
<tr>
<th>Height in Stories</th>
<th>Off Street Parking Spaces per 1,000 square feet.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1 space</td>
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<tr>
<td>One</td>
<td>0.60</td>
</tr>
<tr>
<td>Two</td>
<td>1.06</td>
</tr>
<tr>
<td>Three</td>
<td>1.29</td>
</tr>
<tr>
<td>Four</td>
<td>1.45</td>
</tr>
<tr>
<td>Eight</td>
<td>1.77</td>
</tr>
</tbody>
</table>
Transect Approach

Aerial Perrysburg – Source Map Quest Imagery
Street with some parking
Most Parking to Rear

VIEW FROM OFFICE BUILDINGS
View from Townhouses
# Structured Parking

<table>
<thead>
<tr>
<th>Height in Stories</th>
<th>Floors Structured Parking</th>
<th>Off Street Parking Spaces per 1,000 square feet.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2 spaces</td>
</tr>
<tr>
<td>Two</td>
<td>2</td>
<td>1.06</td>
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<tr>
<td>Four</td>
<td>2</td>
<td>1.45</td>
</tr>
<tr>
<td>Eight</td>
<td>3</td>
<td>2.32</td>
</tr>
</tbody>
</table>
Sugar Land Town Center
Boulder
Mizner Park, Boca Raton
Bridgeport Village Tigard
Multi Story Car Dealership
How to Achieve

• Mandate structured parking.
• Minimum floor area ratios (FAR).
• Prohibit strip development.
  • Towns have strip commercial zoning.
  • More commercial than needed for growth.
• Be able to expand downtowns.
  • Expand into surrounding areas.
  • Build parking structures.
• Address associated legal issues
  • City of Albuquerque, NM
Myth of Walkability

- Advertised as being very important.
- Has little real impact.
  - Ignore the way we work, live, and, shop.
  - Ignores economics of retail.
  - Is oriented to theory based on small freestanding communities of the 19th Century.
Jobs

• Longest commutes are in metro areas.
• People willing to make long commutes:
  • Good job.
  • Good schools.
  • Balance commutes within family.
  • Quality of life.
• Shorter commutes mostly found in freestanding communities.
Short Commute Times

• 101 cities with highest percent of commutes of 9 minutes or less (min population 50,000).
  • 94% Rural Freestanding
  • 86% had a college or university.
  • 70% were county or parish seats.
  • 5% were state capitals.
  • 25% with populations over 75,000.

• High quality local work.
Long Commute Times

• 101 Cities largest percent of commutes of 90 minutes or more. (Min population 5,000)
  • Most on the outer edges of very large metro areas 84% East coast, Texas, California.
  • Small on outer edges of metros 73%.
  • Over 30,000 outer metro 11%.
  • Island or peninsula 10%
  • Very rural areas 6%.
Shopping

• Is there suitable population within walking distance (1/4 to ½ mile)?
  • Supermarket 15,000 people.
  • Discount (Wal-Mart Target) 40,000.
  • Super center 65,000.
  • Hardware store 15,000.
  • Category Killer (Best Buy, Clothing, 100,000.
  • Convenience store 2,500.
  • Drug store 12,000.
Other Frequent Trips

- To school – few neighborhoods, parents too fearful.
- Children to recreation – in neighborhood only in dense urban areas.
- Restaurants
  - Need regional draw to support varied choice.
  - Small freestanding town effect – sushi and other ethnic withdrawal.
Building Urban Cores

- There will be new:
  - Edge cities created.
  - Sub-regional shopping/employment areas.
- Both of these are largely auto-urban.
  - Only office at urban core intensities.
  - Little to no residential.
- Should be a transit locations – radial and circumferential.
Schaumberg Case Study

• This is an existing edge city.
  • Retail
  • Office
  • Industry
  • Population

• Area of 3.7 square miles.

• Auto-urban with some offices having structured parking.
Edge City
Existing Commercial Area

- Ikea
- Auto Dealers
- Malls
- Strip Retail
Existing Central Area
Residential terrace units and mid-rise apartments facing park.
Retail and automobile dealerships.
Auto dealers, office, retail.  Transit terminal heavy rail to light rail to pedestrian.
MODEL EDGE CITY
## Comparison

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres</td>
<td>2,500</td>
<td>400</td>
</tr>
<tr>
<td>Retail</td>
<td>5,700,000 sf.</td>
<td>7,000,000 sf.</td>
</tr>
<tr>
<td>Office</td>
<td>13,000,000 sf.</td>
<td>18,000,000 sf.</td>
</tr>
<tr>
<td>Residential</td>
<td>300 du’s</td>
<td>4,300 du’s</td>
</tr>
<tr>
<td>Park</td>
<td>0 acres</td>
<td>150 acres</td>
</tr>
<tr>
<td>Adjoining Industry</td>
<td>500 acres</td>
<td>500 acres</td>
</tr>
</tbody>
</table>
Sustainability

• 23% more Retail.
• 38% more Office.
• 1,333% more Residential.
• Uses only 16% of the land, includes Park.
• Uses only 10% of the land excluding Park.
• Could have central heating and cooling.
• More people will use transit.
• More people will walk or bicycle.
Transit Critical

- Transit requires less automobile parking.
  - Office workers will come by rail.
  - Service workers will come by rail.
  - A portion of residents will rarely need cars.
- Less parking means higher intensity.
- Far more energy efficient.
Fuel Price

• We do not tax gas and diesel at 50% level.
• Other countries have $6 to $9 gas while we have $3.
• Until we tax, there is no incentive for:
  • Taking transit.
  • Moving closer to work or shopping.
  • Ride sharing.
  • Having smaller cars.
  • Wind and Solar.