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.

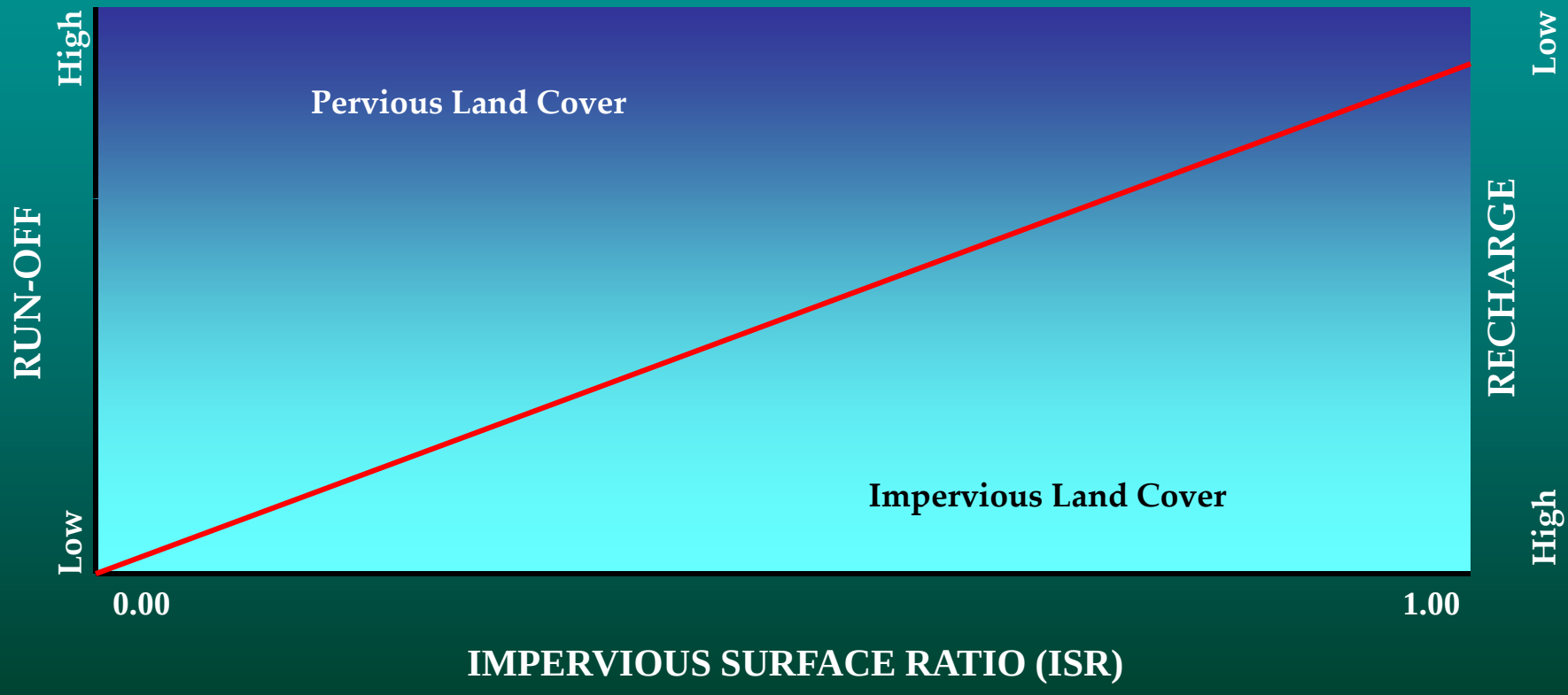
Mandatory Clustering

- 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.

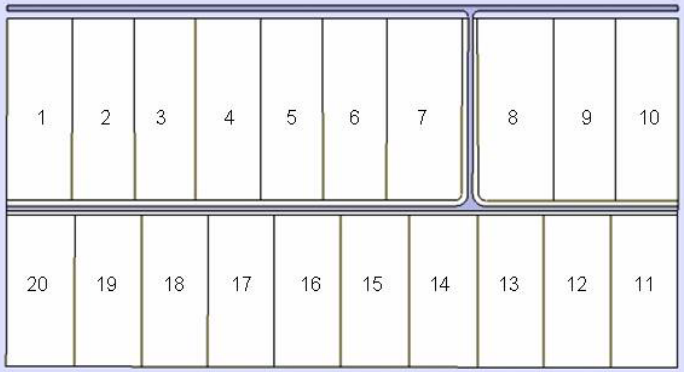
Non-Point Loading

Non-Point Loading – Middle Fork of Chicago River			
Pollutant	Additional Non-Point Loads (tons/year)		Reduction from Cluster
	Conventional	Cluster	
BOD	24.1	3.7	85%
Ammonia	4.11	0.12	98%
Nitrate	3.15	0.07	96%
Phosphorus	.57	0.06	90%

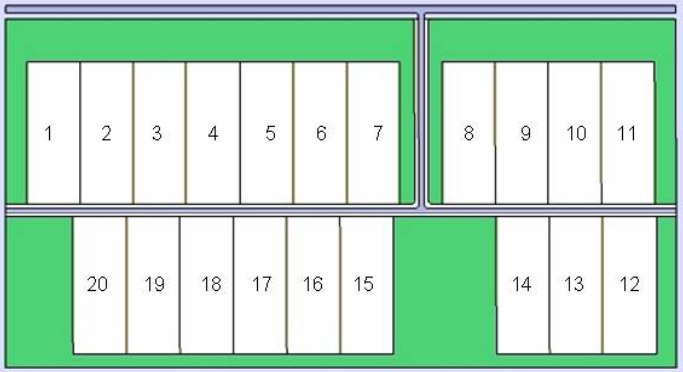
Impervious Surface



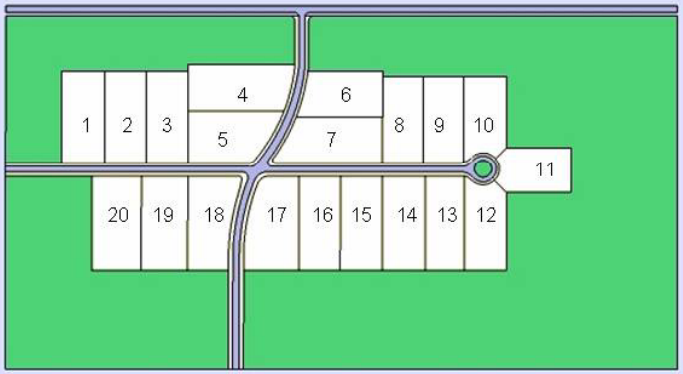
Development Forms



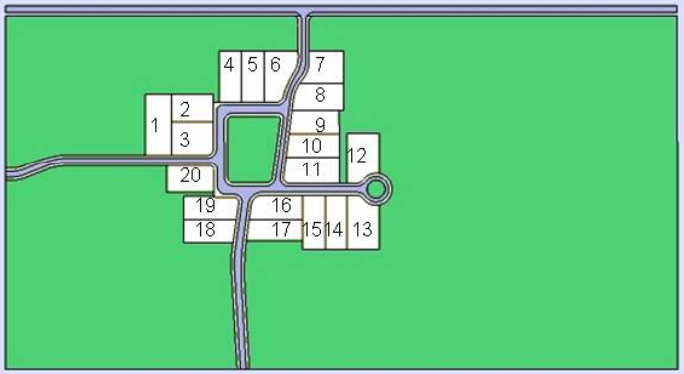
Single Family (20 du's) **OSR 0.00**



Cluster (20 du's) **OSR 0.30**

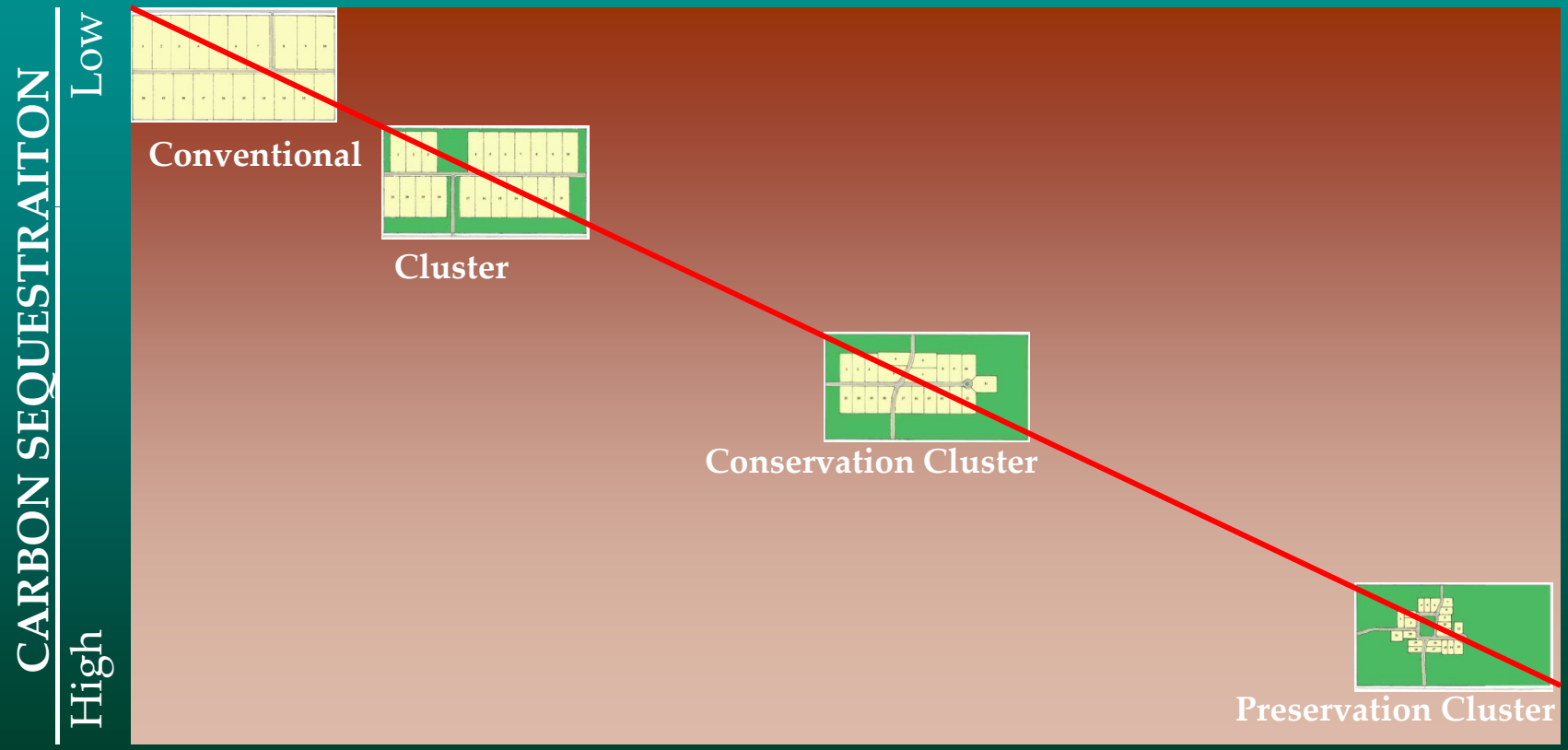


Conservation (20 du's) **OSR 0.50**



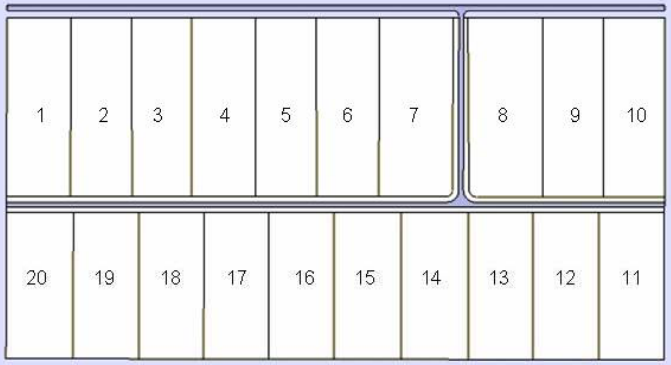
Preservation (20 du's) **OSR 0.80**

Carbon Sequestering and Development Form

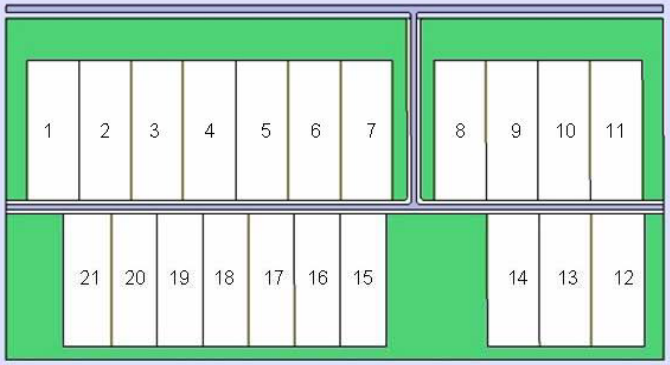


Recharge and Land Cover

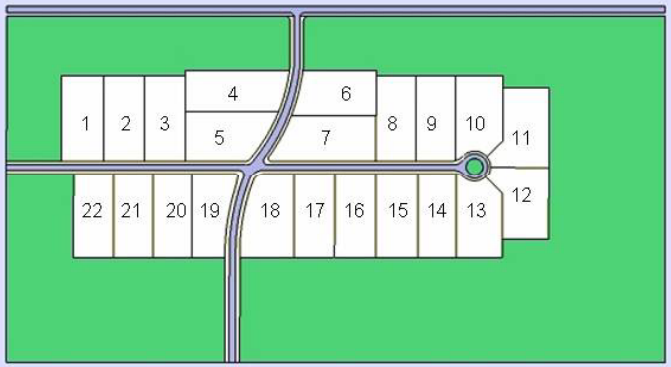
Incentive to Cluster



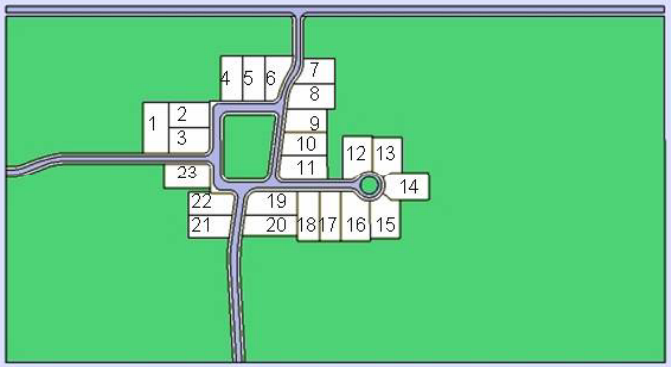
Single Family (20 du's) **OSR 0.00**



Cluster (21 du's) **OSR 0.30**

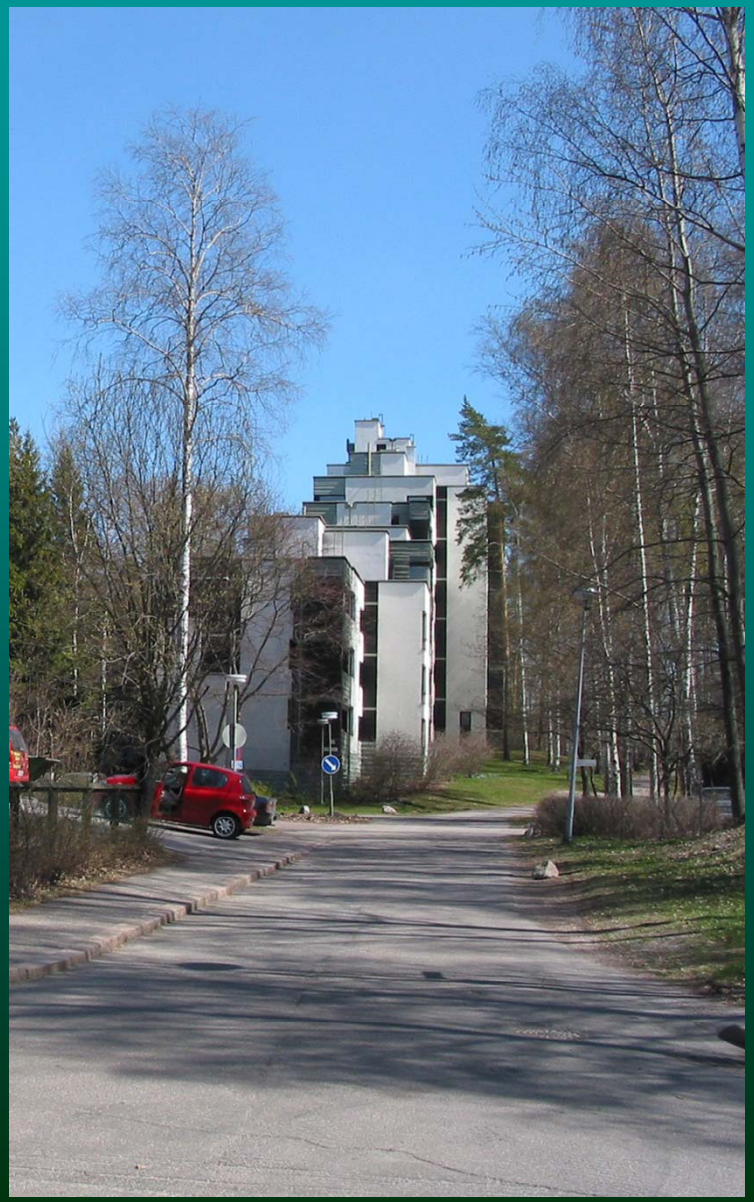


Conservation (22 du's) **OSR 0.50**



Preservation (23 du's) **OSR 0.80**

High Density Suburban Cluster

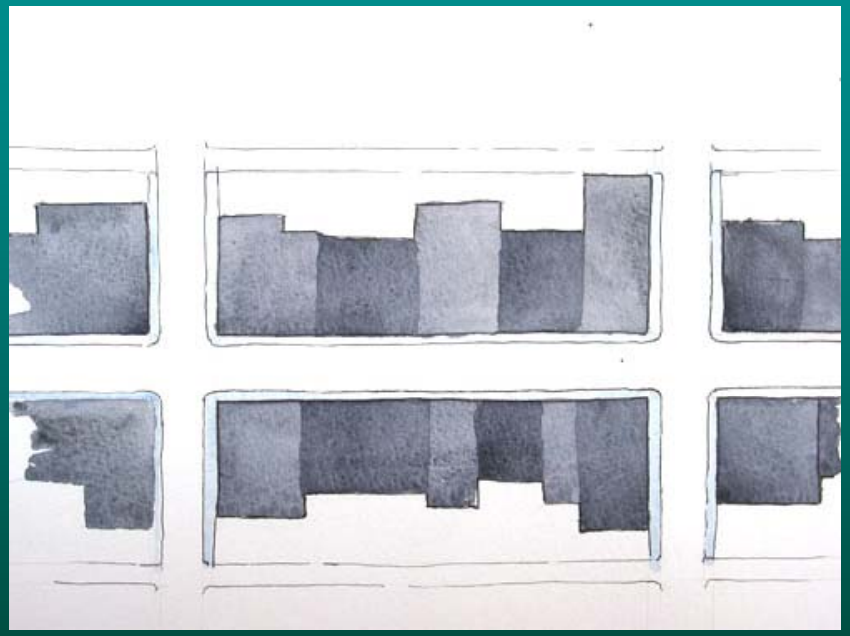


High Density Conservation

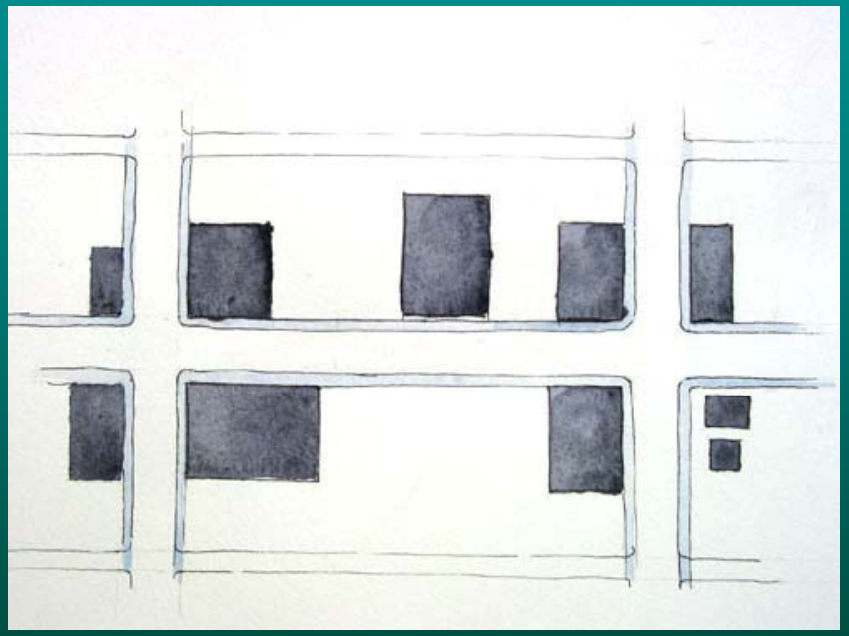
- Gross Density 6.32 du's/ac.
- Open Space 55%
- Development Land 45%
  - Non Residential 10%
    - Retail-Office 60%
    - Mixed Use 40%
  - Residential 90%
    - Single-Family (10,000, 6,000, 4,000sf) 45%
    - Attached Single-Family 30%
    - Multi-Family (4 to 10 stories) 25%

Note: 10,000 sf. lots have gross density of 2.614 du's/ac.

The Urban Dilemma
'At Grade Parking'



Urban 1850-1920 FAR 1.0-2.0



At grade parking FAR 0.25-0.40

Without Structured Parking – Urban is impossible.

Floor Area (FAR) with at Grade Parking

Height in Stories	Off Street Parking Spaces per 1,000 square feet.				
	1 space	2 spaces	3 spaces	4 spaces	5 spaces
One	0.60	0.54	0.45	0.38	0.33
Two	1.06	0.75	0.57	0.47	0.39
Three	1.29	0.85	0.64	0.51	0.42
Four	1.45	0.92	0.67	0.53	0.44
Eight	1.77	1.04	0.73	0.57	0.46

Transect Approach

Aerial Perrysburg – Source Map Quest Imagery

Street with some parking

Most Parking to Rear

VIEW FROM OFFICE BUILDINGS

View from Townhouses

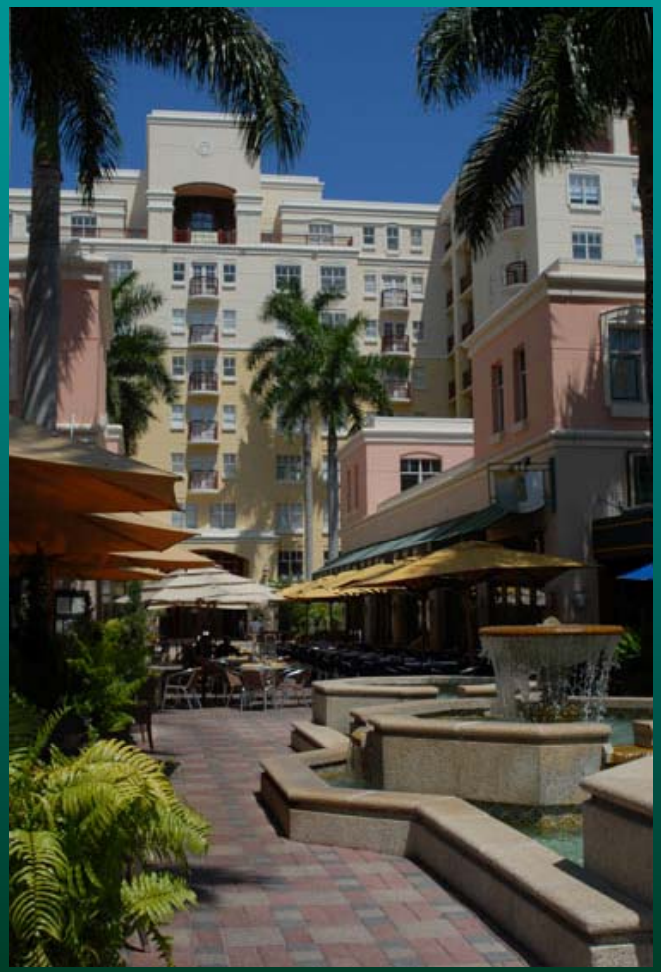
Structured Parking

Height in Stories	Floors Structured Parking	Off Street Parking Spaces per 1,000 square feet.			
		2 spaces	3 spaces	4 spaces	5 spaces
Two	2	1.06	0.88	0.75	0.65
Four	2	1.45	1.22	.92	.78
Eight	3	2.32	1.77	1.43	1.20

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

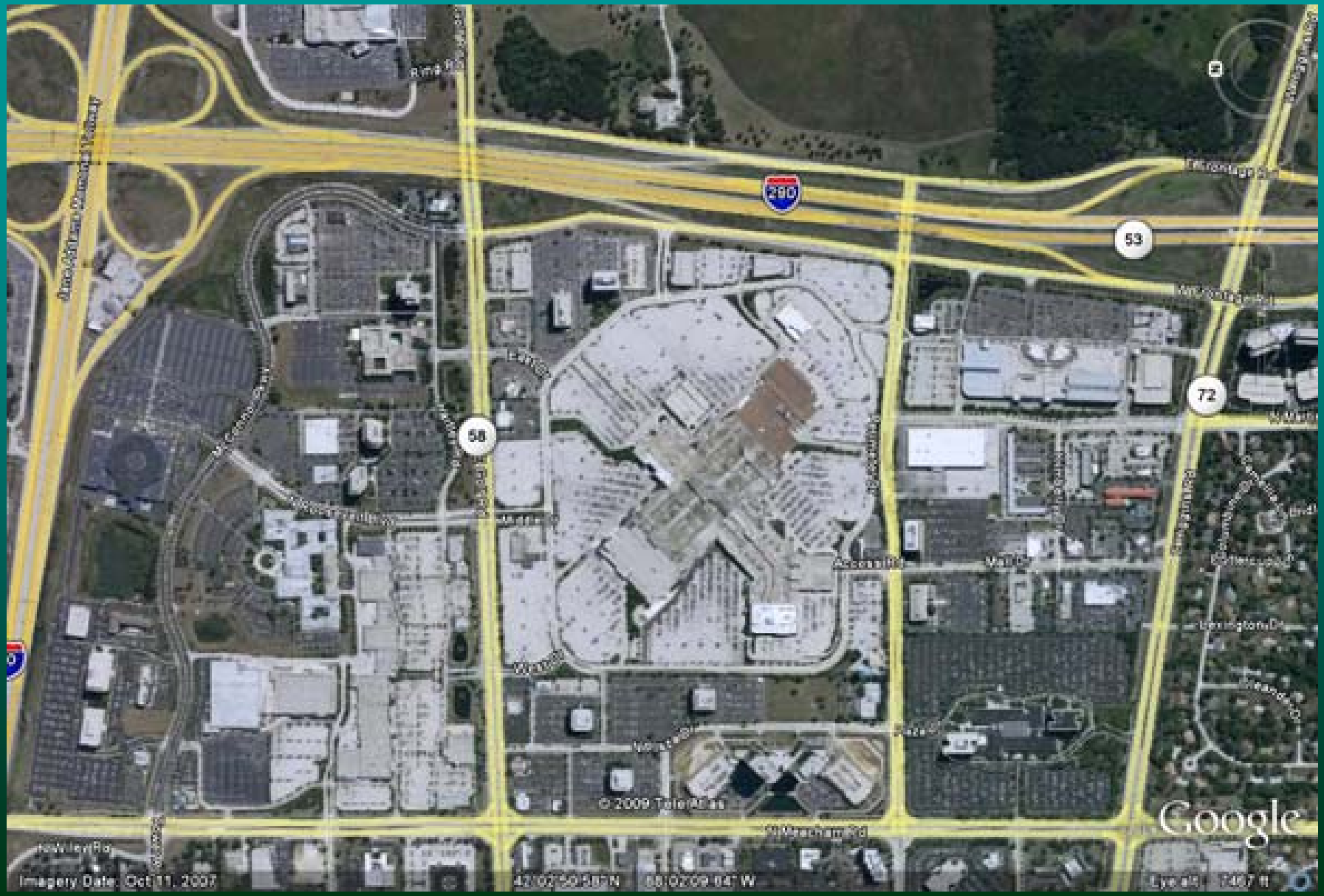
- This is an existing edge city.
  - Retail
  - Office
  - Industry
  - Population
- Area of 3.7 square miles.
- Auto-urban with some offices having structured parking.

Edge City

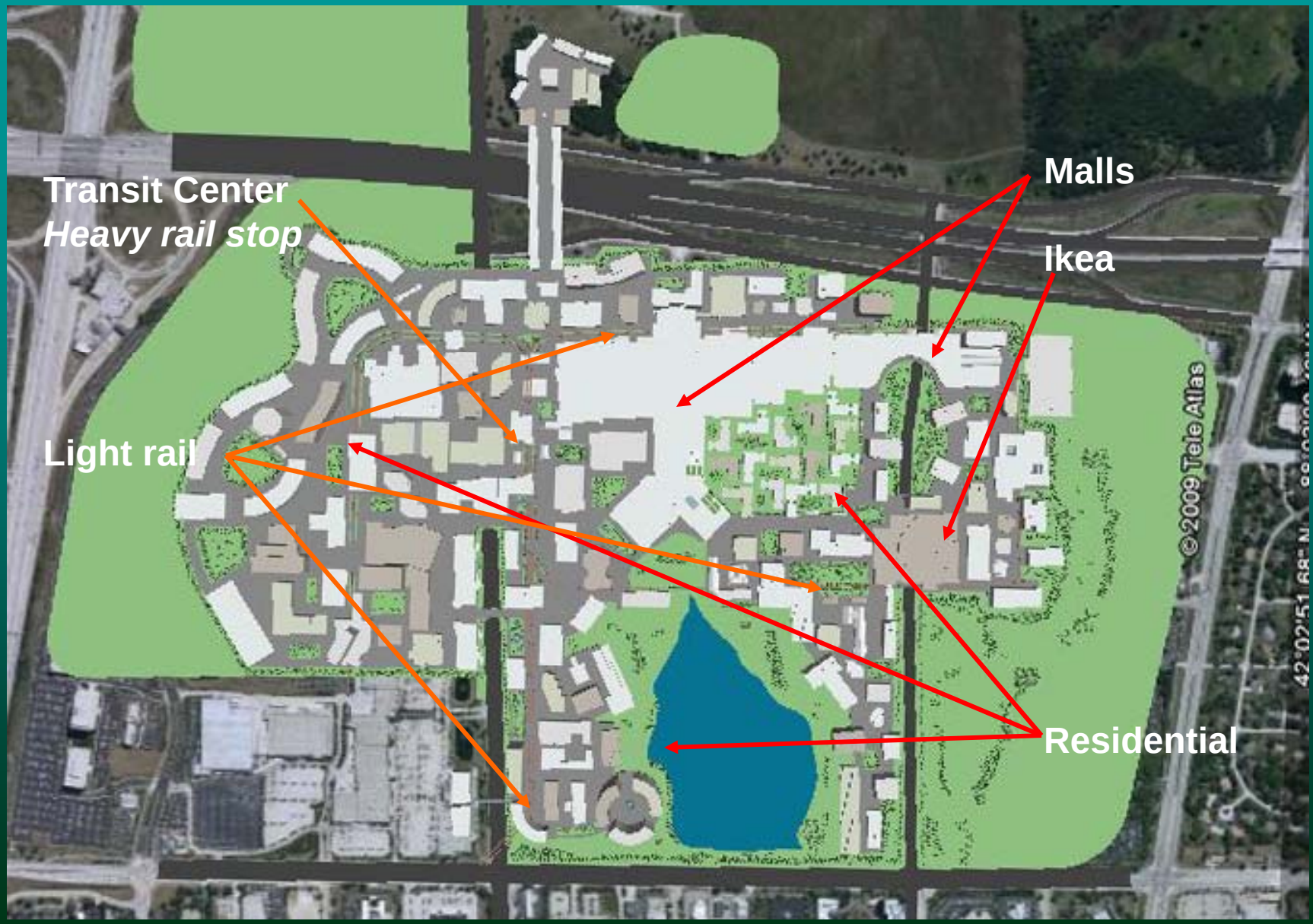

Industry
53
Office & Industry
58
72
Retail
Forest Preserve
Office

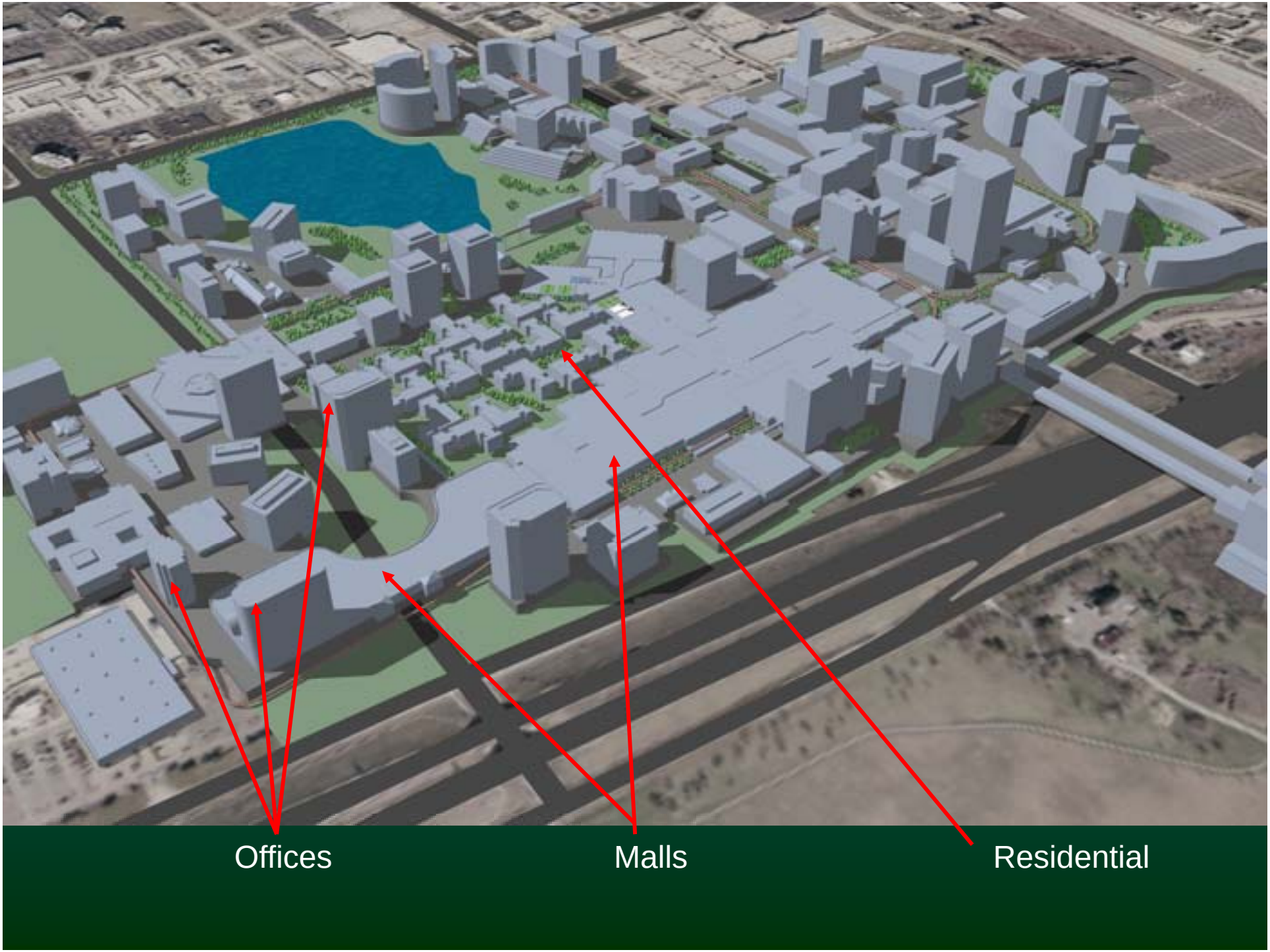
Existing Commercial Area

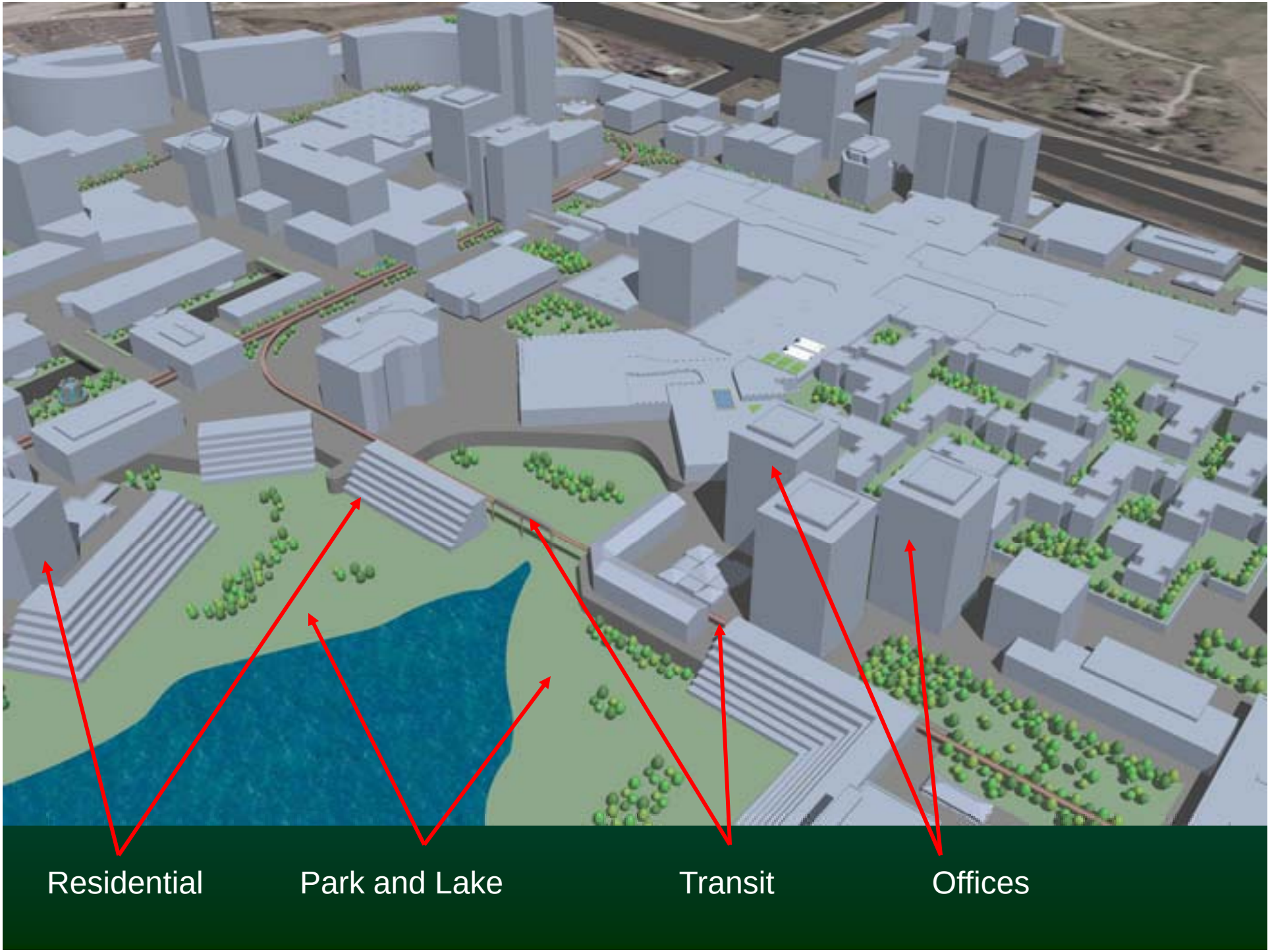
Existing Central Area

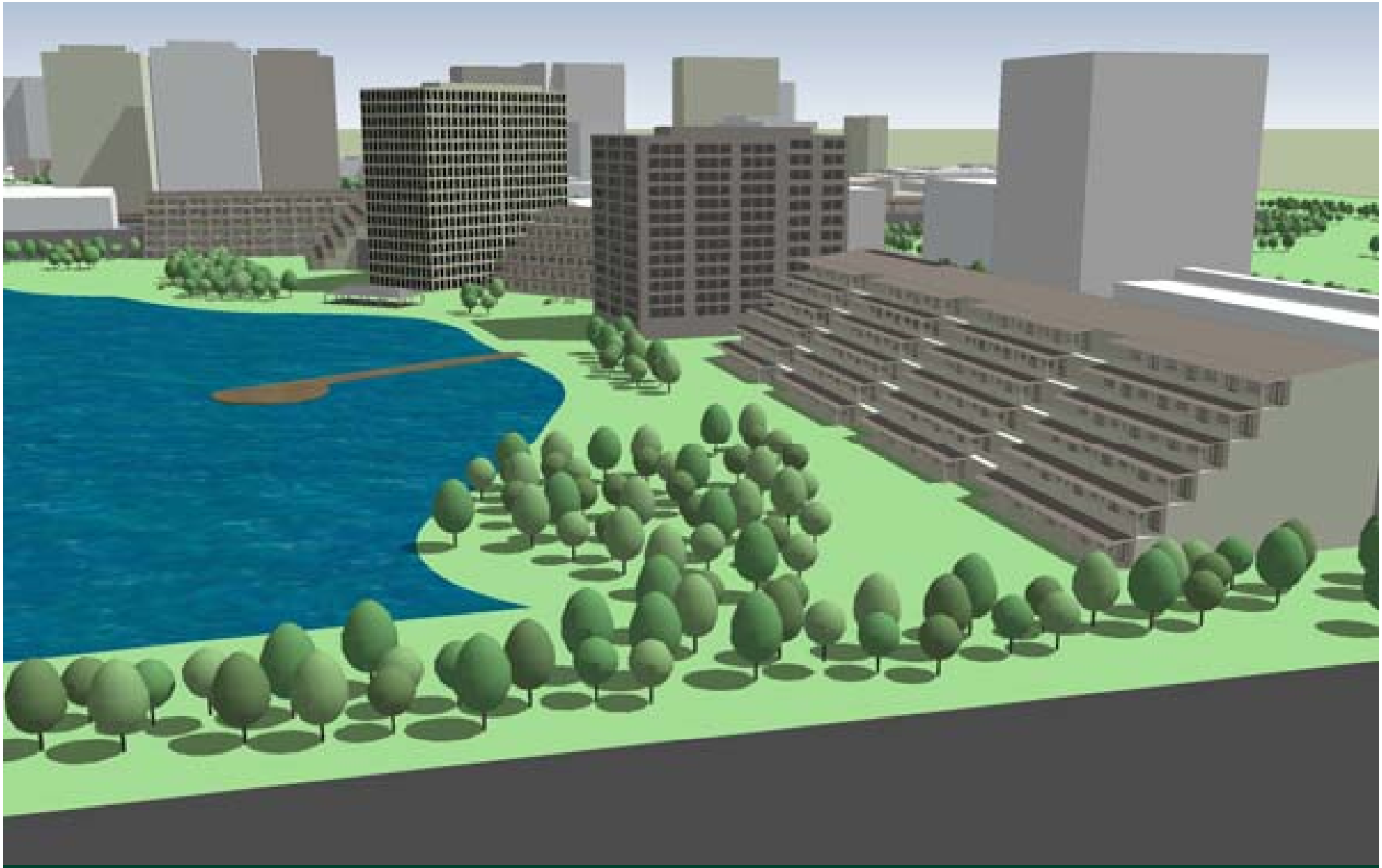


New Urban Core

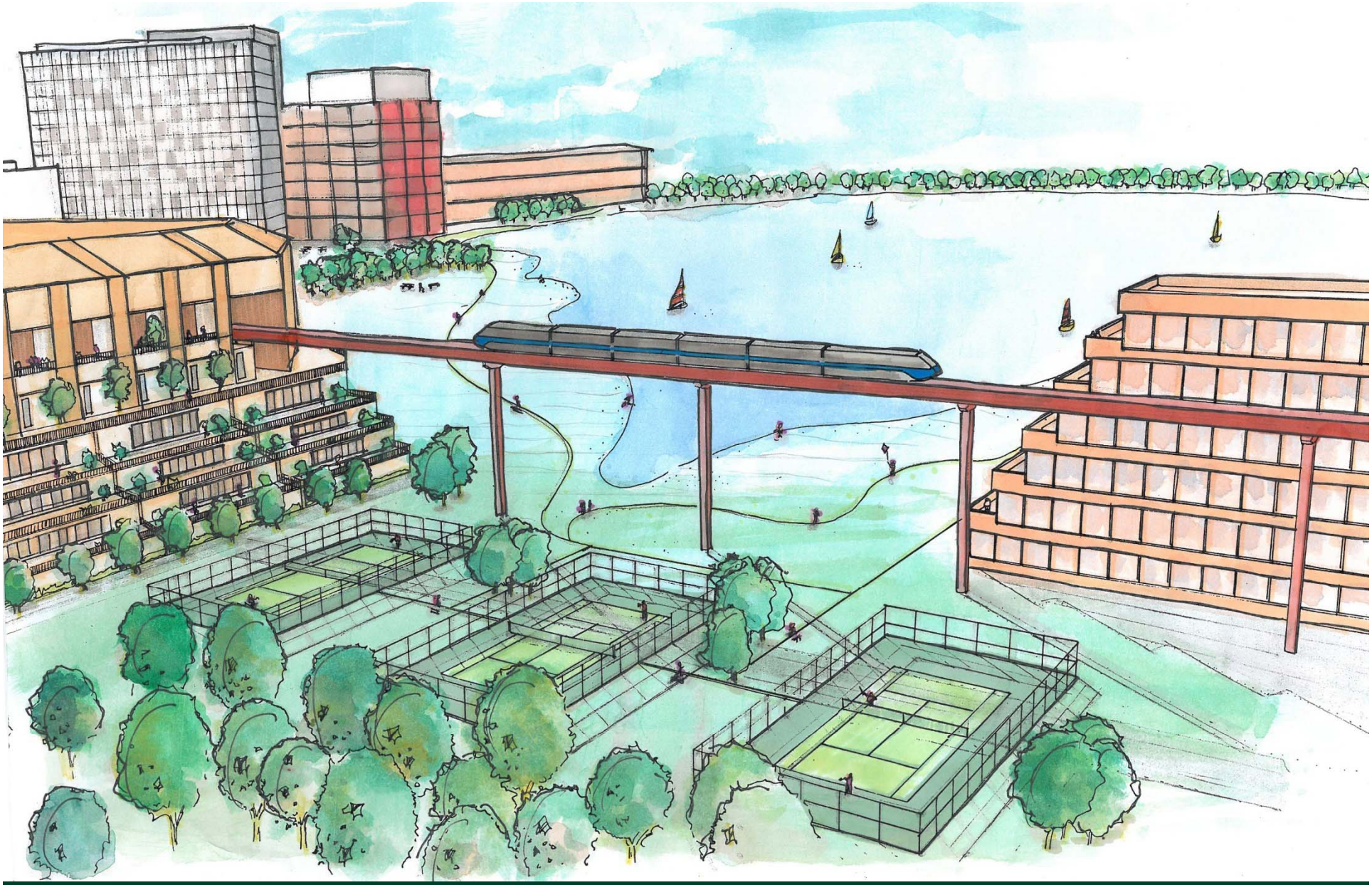



Offices
Malls
Residential


Residential
Park and Lake
Transit
Offices

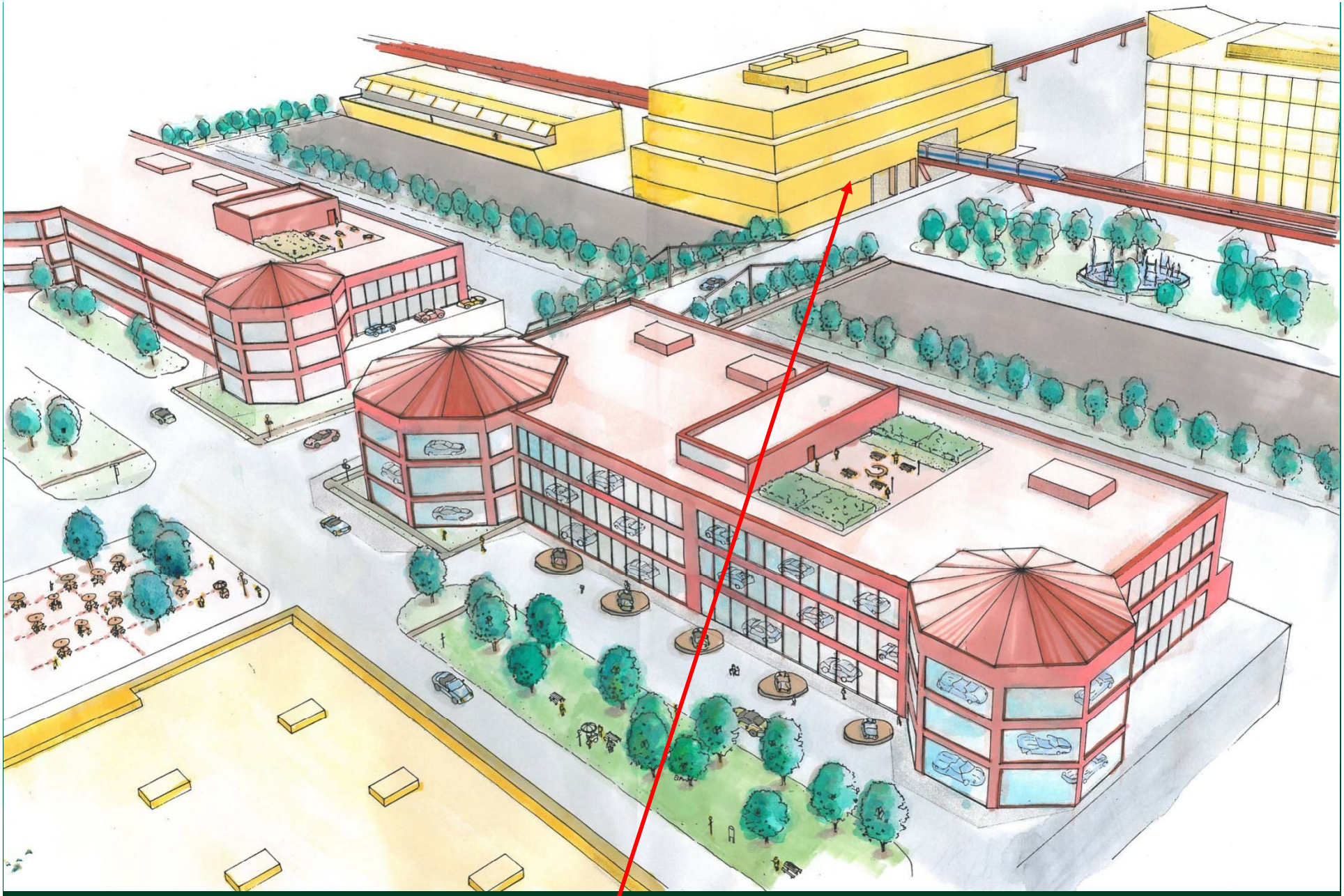


Residential terrace units and mid-rise apartments facing park.



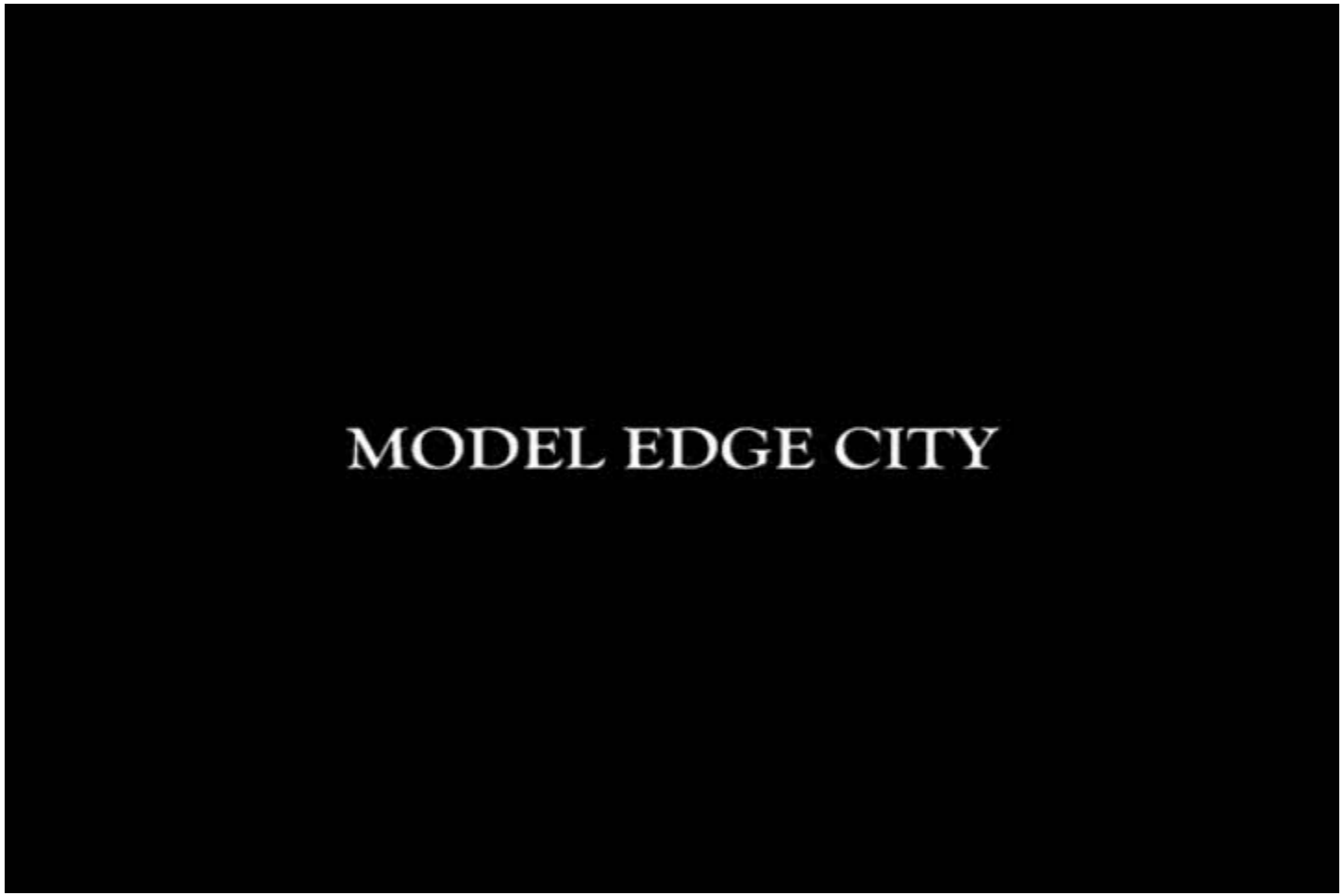
Park with Transit.

Retail and automobile dealerships.



Auto dealers, office, retail.

Transit terminal heavy rail to light rail to pedestrian.


MODEL EDGE CITY

Comparison

	Existing	Paradigm
Acres	2,500	400
Retail	5,700,000 sf.	7,000,000 sf.
Office	13,000,000 sf.	18,000,000 sf.
Residential	300 du's	4,300 du's
Park	0 acres	150 acres
Adjoining Industry	500 acres	500 acres

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.