

Responsible Options for an Affordable Green Future



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Outline

- Options for Building and Developing Affordable Green Subdivisions
- Affordable Green Home Construction Options
- Affordable Green Development Options
- What are the Costs Associated with Each Option
- Case Studies
- Which has a Greater Impact?
- Advanced Energy Features

Context Setting

Two Questions:



What is Affordable?

What is Green?

What is Affordable?

Median Household Income & Housing Value 2008

- State of Wisconsin \$48,000
- Milwaukee County \$38,000 / \$145,700 = 3.83
- Racine County \$50,000 / \$157,800 = 3.15
- Kenosha County \$53,000 / \$165,500 = 3.12
- Waukesha County \$69,000 / \$235,700 = 3.41
- Ozaukee County \$74,000 / \$243,400 = 3.28
- Washington County \$60,000 / \$207,200 = 3.45

What is Green?

Good Question!

- Types of Programs
 - Green Built Home (Wisconsin Environmental Initiative)
 - Energy Star Certification
 - NAHB Green Home Certification
 - LEED (US Green Building Council)
- House Construction vs. Development
- Which has the Biggest Impact on the Environment?

Green Home Construction

- Site Options
- Energy Star Certification (10% Annual)
- OVE Framing (10% Energy Savings)
- Energy Heel Truss (25% Better)
- Mechanical Systems (T-Stat 10-15%)
- Windows (50% Heat Gain/loss)
- Electrical (20% Lighting -75% Better)
- Plumbing (20,000 Gal + Annually)

What Does it All Cost?

- Energy Star Certification \$400
- OVE Framing \$500
- Energy Heel Truss \$ 175
- Mechanical Systems \$580
- Windows \$ 100 (Low-E)
- Electrical \$ 155 (\$5-\$7 per bulb)
- Plumbing \$ 500

What Does it All Cost?

- 1400 Square Foot House at \$65 per/square foot Cost
- Bricks & Sticks Cost About \$91,000
- Minimum Green Improvements \$ 2500 or 2.47%
- This Premium Adds About \$17.00 per/month and About \$6000 Over the Life of a 30 Year Mortgage

Advanced Green Features

Green Feature	Price	Focus on Energy Rebate	Standard Product	"Green" Product saving feature	Standard product yearly usage	"Green" product savings (unit)	Yearly savings (\$)	Buy back
Low flow faucets/showers	\$160	\$0	2.2 gpm faucet/2.5 gpm shower	1.5 gpm faucet/1.75 gpm shower	8212 gallons	1058 gallons	\$116	1 year
Dual flush toilets	\$350	\$0	1.6 g/flush	.8 g/flush/1.6 g/flush	6752 gallons	3760 gallons	\$415	1 year
Energy Star rating light fixtures	\$1,700	\$360	non-energy star rated	use 75% less energy	\$90	\$67.50	\$68	25 years
Solar 1.2 kW PV Module System	\$16,500	\$2,845	none	produces 1563 kW-hr/year	10,000 kwhr/year	1563 kw-hr/year	\$187	88 years
Solar Hot Water System - 80 gallon	\$13,250	\$3,000	40 gallon power vented tank	heats 80% of hot water usage	212 therm/year	153 therm of gas	\$180	73 years
*estimated price for solar packages do not reflect FOE rebate								
*all number based on 2.5 bath home								
TOTALS:	\$31,960	\$6,205					\$966	

Notes

4 family home			
			one Therm = 100,000 Btu
Therms per year	1450		cost = \$1.18/therm
kW-hr/year	10000		cost = \$.12 Kwhr
water usage	39785		cost = \$.11/gallon

**What is the use of a fine house if you
haven't got a tolerable planet to put it on?**



-Henry David Thoreau

Wisconsin Trends

Trends

- Population – 21.4% Increase from 1970-2000
- 2030 Population Estimated to be 6.42 Million
- Household Size Should Decrease from 2.5 to 2.3
- 88% of Americans Drive to Work
- 79.5% of Wisconsinites Drive Alone to Work
- Farm Land – 18% Decrease from 1975-2000
- Number of Farms – 25.5% Decrease from 1975-2000
- Water Conservation
- Climate Change
- Renewable Energy
- Availability of Land

Sprawl Causes

- Low Suburban Land Prices
- Low Transportation Costs
- Demographics
- Record Low Mortgage Rates
- Government Regulations

Impacts of Sprawl

- Higher Rates of Driving & Vehicle Ownership
- Greater Risk of Fatal Auto Accidents
- Increased Levels of Green House Gas Emissions
- Depressed Rates of Walking & Alternative Transportation Use (Mass Transit)
- Greater Loss of Public Open Space
- Risk to Wildlife Habitat and Endangered Species
- Health and Physical Activity

My Assumptions

- More Opinion - Less Fact
- Development Strategies Can Have Larger Impact
- Urban Sprawl is “Not Good”
- Government Regulations & Zoning Play a Large Role
- Development & Growth is The Answer....Not The Problem
- Being Against Sprawl Does not Mean Being Against Growth

Benefits Of “Smart” Growth

- Reduction of Greenhouse Gas Emissions
- Better Management of Rivers & Lakes
- Less Energy Consumption
- Preservation of Farm Land & Native Areas
- Utilization of Public Transportation Increases
- Increase of Public Park Space
- Wildlife Protection

Public Opinion?

- Poll Taken by the National Association of Realtors Found that 57% of Voters Would be More Likely to Purchase Close to Green Space or Park
- 50% Said They are Willing to Pay 10% More for this Amenity

Case Study

- 90 Lot Subdivision that Brookstone Homes Built in 2005
- Major Southeastern Wisconsin City
- Minimum Lot Size 80' x 120' (9662 sq ft)
- Entryway 100' Pavement to 80' Pavement
- All Other Roads Were 66'
- Original Density was 2.25 Units per/acre

What Was Done?

- Reduced Lot Size to 60' X 100'
- Reduced all Roadway Size to 28' and 25'
- Reconfigured Street Layout
- Assumed an Average of 2467 Square Feet of Impervious Surface per Lot
- Increased Density from 2.25 to 2.77

The Results

Original 90 Lot Layout

- Density 2.25
- Centerline 6392'
- Impervious 10.9 ac
- Street Impervious 8.9 ac
- Open space 5.2 ac
- Pond Size 139,473 sq ft

New 111 Lot Layout

- Density 2.77 (23%)
- Centerline 6833' (7%)
- Impervious 10.2 ac (-6.5%)
- Street Impervious 3.9 ac (-56%)
- Open space 11.6 ac (122%)
- Pond Size 156,968 sq ft

What About Tax Dollars?

90 Lots

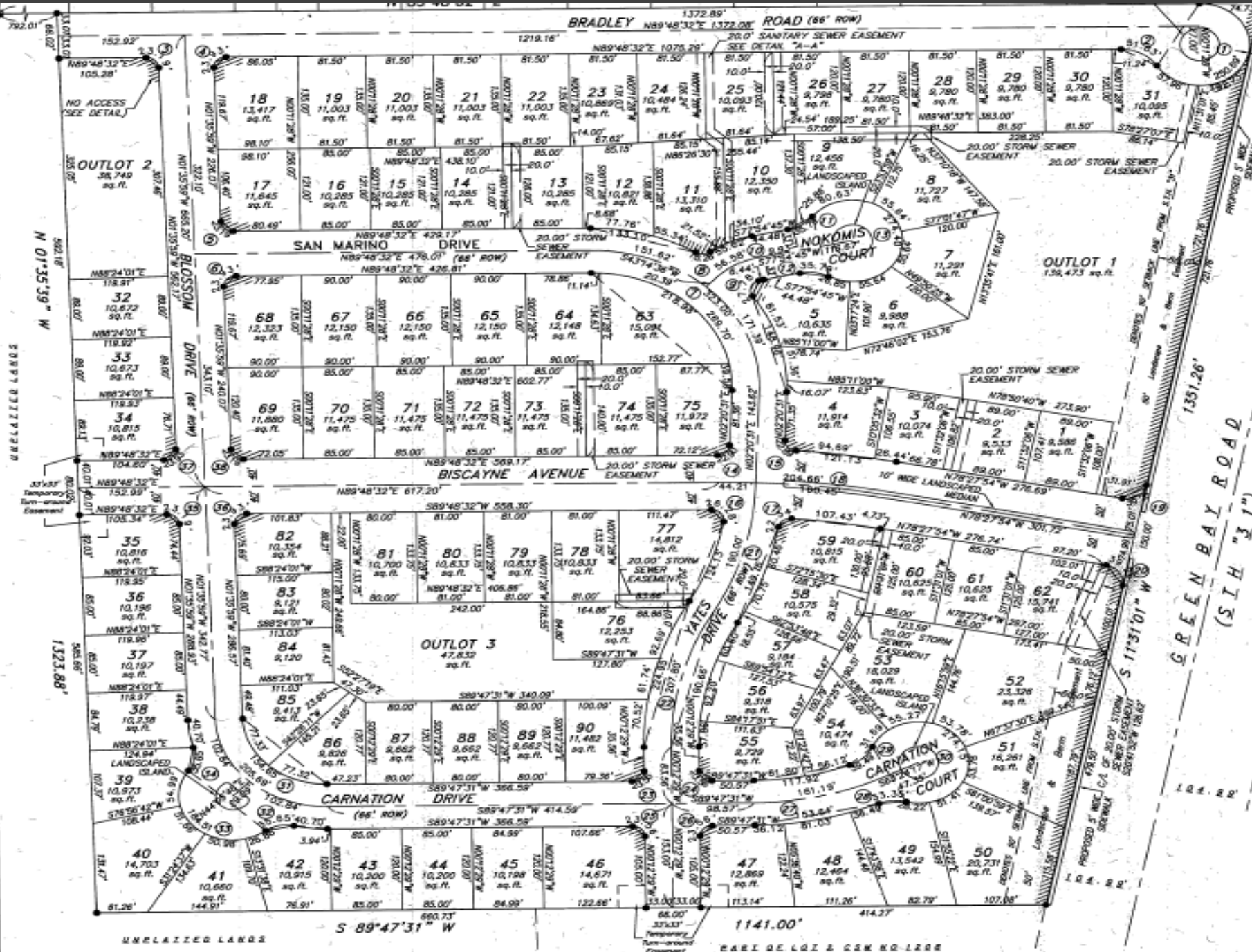
- Lot Cost \$58,771
- Home & Lot Selling Price (25%) \$235,082
- Assessment Ratio 102.08
- Assessed Value \$241,664
- Mill Rate 15.77
- Annual Tax Per Home \$3,811
- Total Annual Community Tax \$342,994

111 Lots

- Lot Cost \$47,944
- Home & Lot Selling Price (25%) \$191,777
- Assessment Ratio 102.08
- Assessed Value \$197,147
- Mill Rate 15.77
- Annual Tax Per Home \$3,109
- Total Annual Community Tax \$345,100

Summary

- Density Increase 23% (Only 21 Lots)
- Decreased Impervious Road Pavement 56% (5 Total Acres)
- Overall Impervious Surface Decreased 6.5%
- Open Space Increased 122% (6.4 Acres)
- Tax Revenue Neutral



NOTES: 1. SEE PLAT FOR ALL DIMENSIONS
2. SEE PLAT FOR ALL DIMENSIONS

LANDSCAPED
20.40'

PROPOSED 5' WIDE
SIDEWALK

1351.36'

GREEN BAY ROAD
(6.11' "11")

S 11°31'01" W
110.11 S

PROPOSED 5' WIDE
SIDEWALK

S 82°47'31" W

1141.00'

Is It Affordable?

- Conservative Estimates put Home and Lot Cost at 20% Less
- 20% on a \$235,000 Home is \$47,000
 - That's about \$300.00 per/month

Will it Work?

- University of Southern California Study shows that Baby Boomers (1946-1964) have an increased preference for more compact, walkable neighborhoods with a greater sense of community.
- Yankelovich Consultants found that Generation X (1960's-early 80's) buyers have a stronger commitment to traditional neighborhood relationships and more highly value sidewalks and nearby recreational facilities.
- A 2002 Housing Preference Study (Atlanta) found that 40% of those surveyed would trade a larger lot for a smaller lot to obtain amenities such as: sidewalks, narrower connected streets, shops & services, parks, and sense of community.

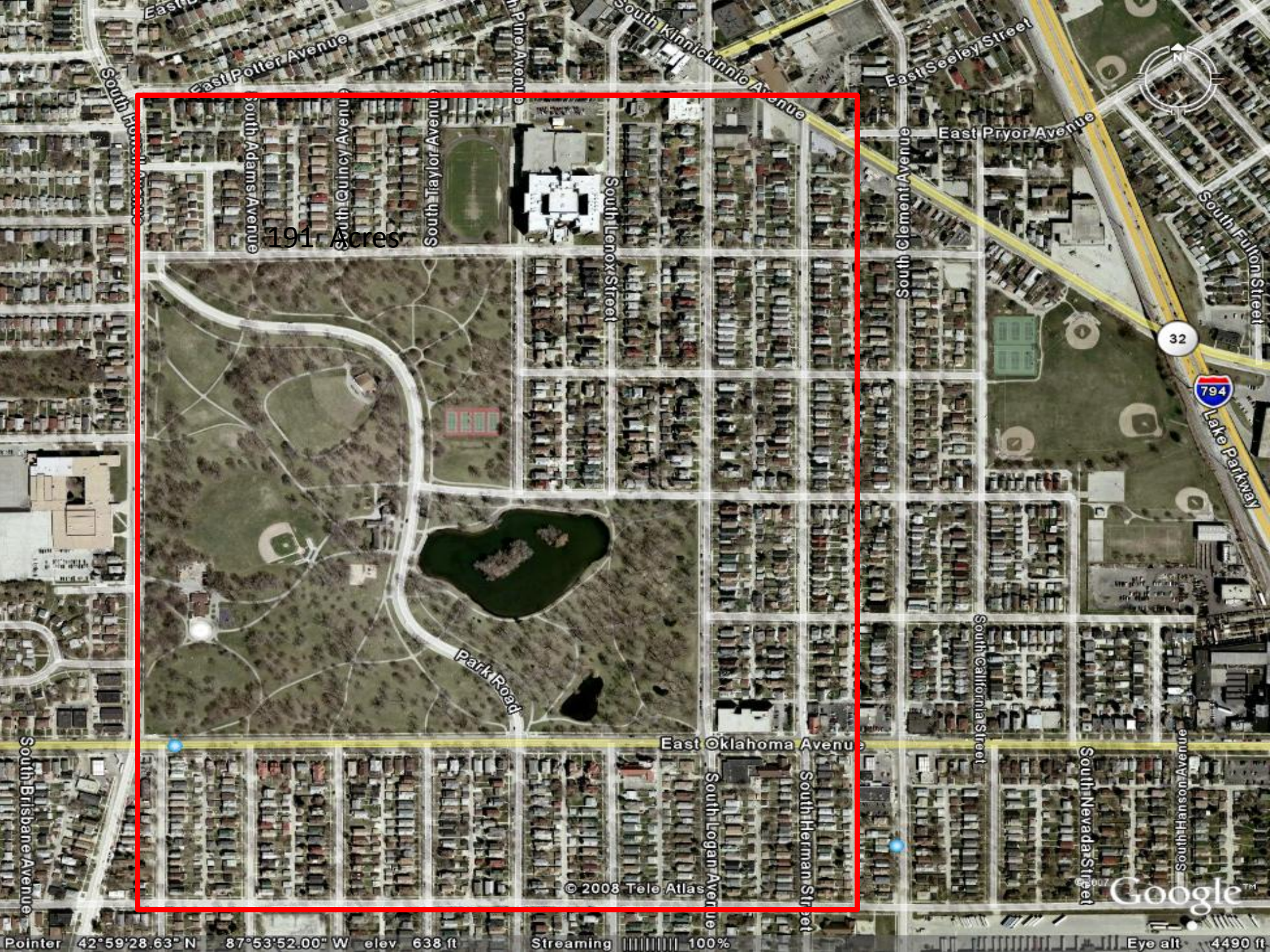
Another Interesting Case Study

Low Density

- 191 Acres
- 110 Homes
- Average Housing Price
\$400,000 +
- Zero Public Open Space
- Zero Schools, Shopping, or
Work Locations
- Automobile Use Required
100%

High Density

- 191 Acres
- 610 Homes
- Average Housing Price
\$185,000
- 75 Acres or 40% of Total
- Multiple Schools, Shopping,
and Work Locations Nearby
- Automobile Use Optional
Much of the Time



East Potter Avenue
South Adams Avenue
South Quincy Avenue
South Taylor Avenue
South Lenox Street
South Clement Avenue
East Pryor Avenue
South Fulton Street
South California Street
South Nevada Street
South Hanson Avenue
East Oklahoma Avenue
South Logan Avenue
South Herman Street
Lake Parkway
32
794
Park Road
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Google



Mary Court

Walnut Hollow



Margaret Mary Court

Irwin Court

Gray Fox Run

Glacier Pass

Wildwood Trail

State Road 83

Summit Avenue / East Summit Avenue

Swansea Glen

Holyhead Drive

Consider This

- The Green Housing Movement is Much More Than Building Green Homes
- Energy Demand in The United States is a Runaway Train (Oil Consumption in US is More Than China, Japan & India Combined)
- Do You Really Believe There Will Always be More?
 - Oil
 - Land & Open Space
 - Clean Water
- It is Time For a Paradigm Shift in Wisconsin!

