

Session Working Title: At the Corner of Healthy and Profitable:

the Return on Investment in Developing Healthy Places

Time: ULI Spring Meeting in Houston on Wednesday, May 13,
2:45-4:15

Description: More and more developers are positioning their projects to capitalize on the demand for healthier lifestyle. But is the effort and extra money it takes to focus on wellness worth it? This session will explore the deal side and look at the return on innovative projects that have emphasized health. Don't miss the chance to hear about lessons learned from some projects, under development and completed, from across the country.

*Serenbe: On the edge of urban Atlanta
for all ages.*

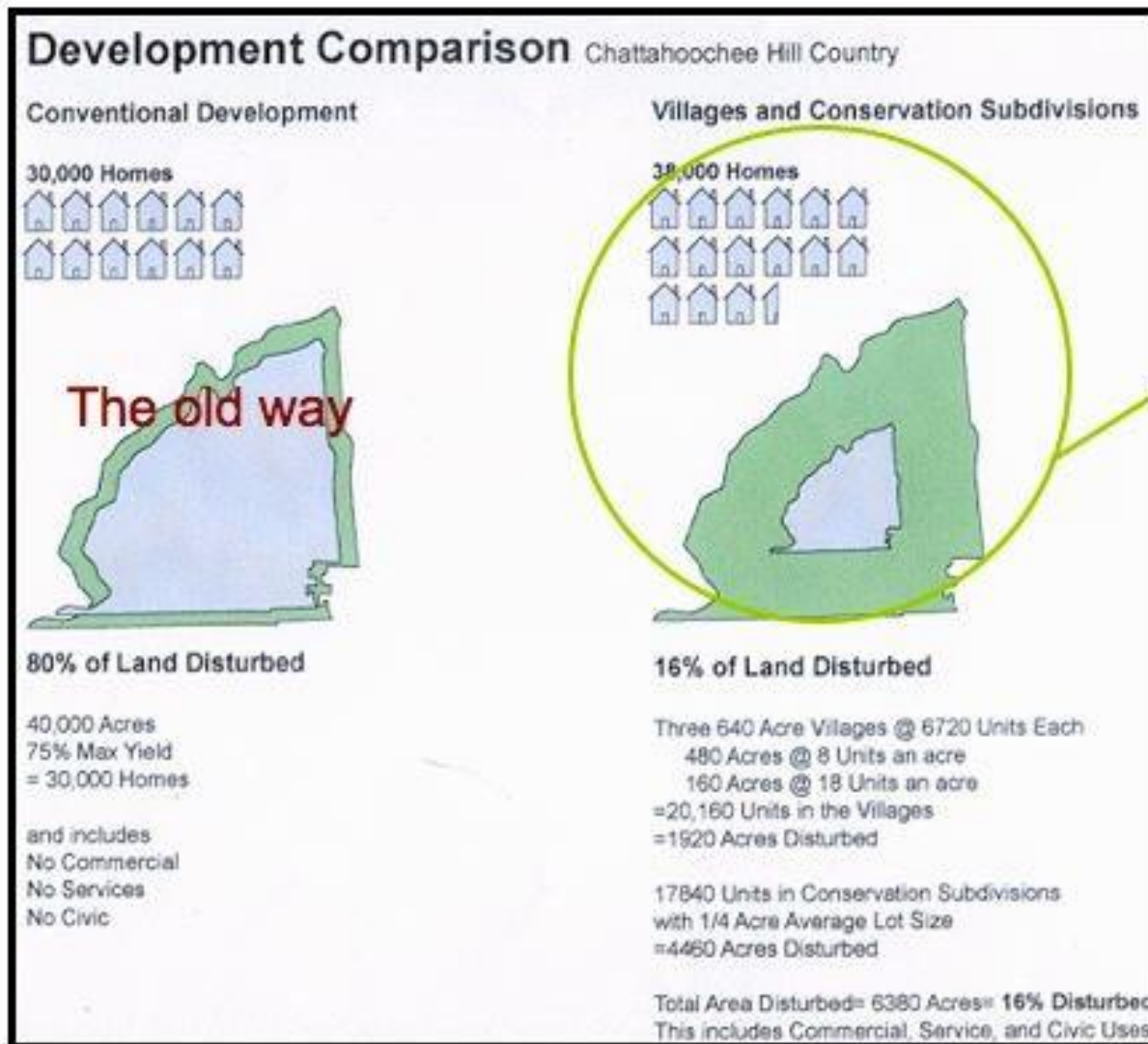




The Beginning 1991

Connecting our children to nature for

Development Comparison



A new way

Serenbe

an example of balanced growth

70% protected
green space

Rural



Urban



The discovery is people are healthier when clustered. Infrastructure costs 40% less.



Serenbe: A community landscaped for health



Non-lawn landscape cost 40% more at installation and 80% less to maintain each year

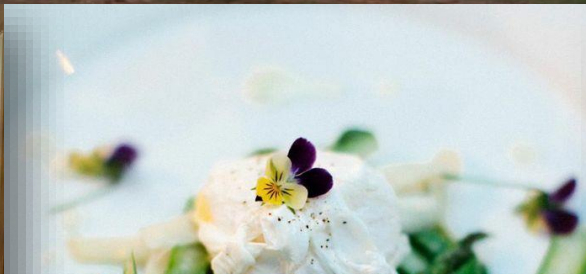
Installation and maintenance is no more than ornamental planting. Benefits are large.

Serenbe: *A community of edible land*





Serenbe: *A community of food*



Organic farm was self supporting by year 4 and expense was charged off to marketing in first years.



SEI is developing cost comparisons.




Serenbe: where storm water is a feature in nature.

Serenbe: *A community of paths and natural nature*



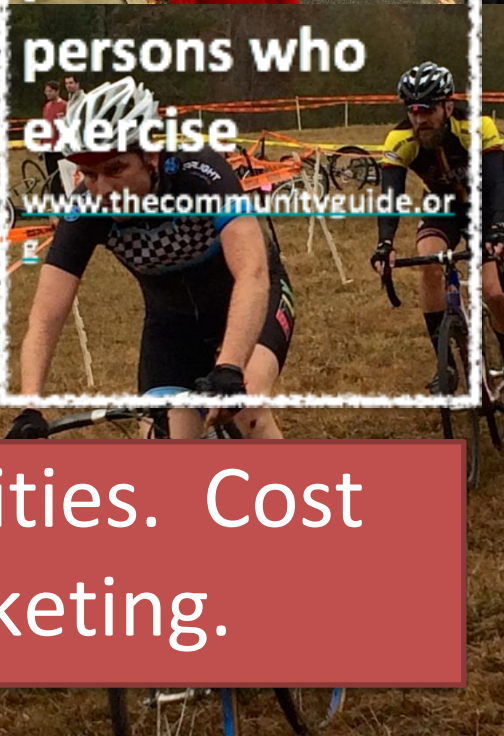
Cost of nature trails is minimal especially compared to parks or golf courses.

Serenbe: *A community of health*



Creating, or improving access to places for physical activity can result in a 25% increase in the percent of persons who exercise

www.thecommunitvguide.org



Universtiy intern coordinates activities. Cost \$25,000 a year charged to marketing.

Cost - a few \$100. per bench + access to nature.

Serenbe: *A place for meditation*

Benefits of MEDITATION

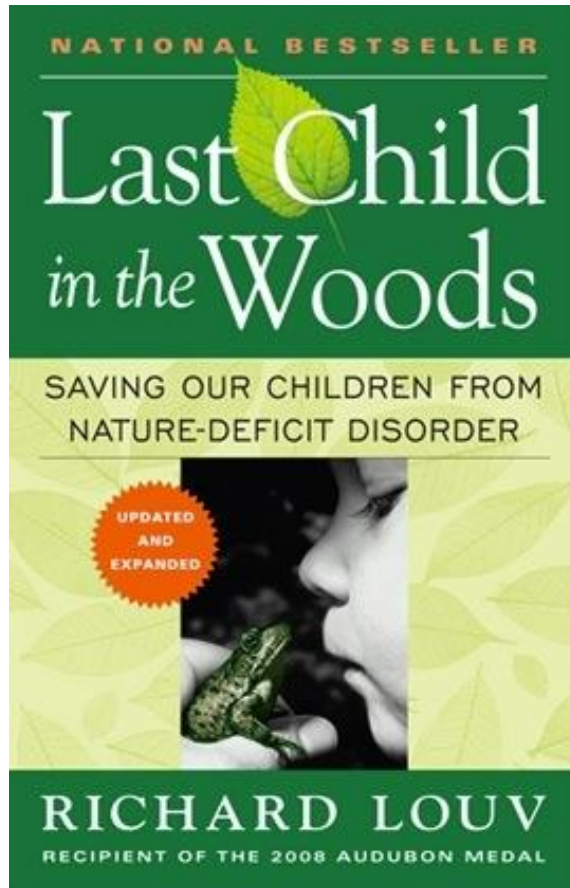




Serenbe: A community with accidents

What are the costs and
what are the benefits?

The Importance of Nature and the Development of our Children



WHAT ARE THE BENEFITS?

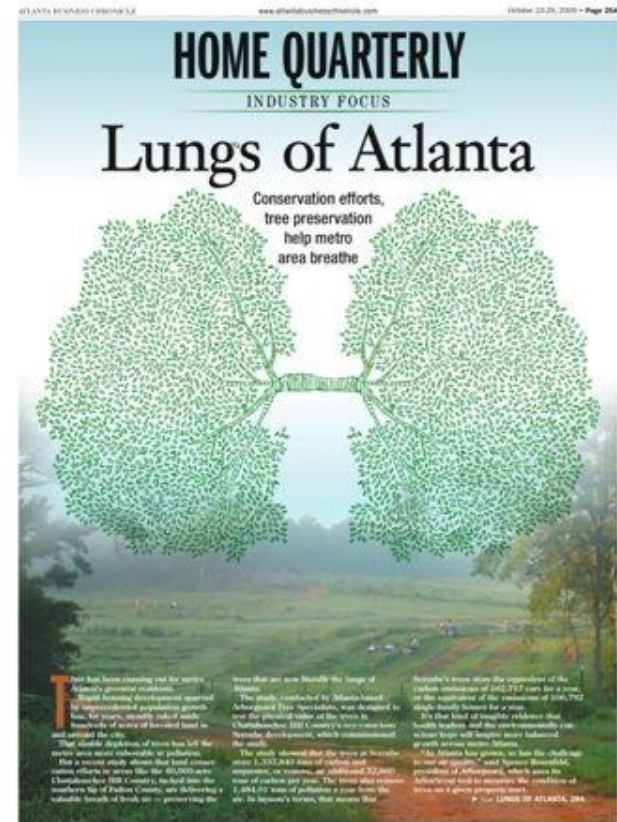
Protected Land offers better air quality.

Serenbe ArborScout Tree Inventory

Assessing Effects and Values of Urban
Trees



submitted by:
Arborguard
June 2009



- An average car emits one pound of carbon for every mile driven, and the average Atlanta commuter drives 40 miles to and from work every day. Thus, the average commuter puts out 40 pounds of carbon a day!
- **Serenbe's trees sequester the equivalent of 7,213 car's carbon emissions for a year!** The total amount of carbon stored in the tissue of Serenbe's trees is the equivalent of 182,717 cars emissions for one year.

Research report

Morbidity is related to a green living environment

J Maas,¹ R A Verheij,² S de Vries,³ P Spreeuwenberg,² F G Schellevis,^{1,2}
P P Groenewegen^{2,4}



¹EMGO Institute VU University Medical Centre, Amsterdam, The Netherlands; ²NIVEL (Netherlands Institute for Health Services Research), Utrecht, The Netherlands; ³Astra, Green World Research, Wageningen, The Netherlands; ⁴Utrecht University, Department of Human Geography, Department of Sociology, Utrecht, The Netherlands

Correspondence to: Dr J Maas, EMGO Institute, VU University Medical Centre, Van der Boerhorststraat 7, 1081 BT Amsterdam, The Netherlands; jolanda.maas@rivm.nl

Accepted 10 July 2009
Published Online First
15 October 2009

ABSTRACT

Background: As a result of increasing urbanisation, people face the prospect of living in environments with few green spaces. There is increasing evidence for a positive relation between green space in people's living environment and self-reported indicators of physical and mental health. This study investigates whether physician assessed morbidity is also related to green space in people's living environment.

Methods: Morbidity data were derived from electronic medical records of 195 general practitioners in 96 Dutch practices, serving a population of 345 143 people. Morbidity was classified by the general practitioners according to the International Classification of Primary Care. The percentage of green space within a 1 km and 3 km radius around the postal code coordinates was derived from an existing database and was calculated for each household. Multilevel logistic regression analyses were performed, controlling for demographic and socio-economic characteristics.

Results: The annual prevalence rate of 15 of the 24 disease clusters was lower in living environments with more green space in a 1 km radius. The relation was strongest for anxiety disorder and depression. The relation was stronger for children and people with a lower socioeconomic status. Furthermore, the relation was strongest in slightly urban areas and not apparent in very strongly urban areas.

Conclusion: This study indicates that the previously established relation between green space and a number of self-reported general indicators of physical and mental health can also be found for clusters of specific physician-assessed morbidity. The study stresses the importance of green space close to home for children and lower socioeconomic groups.

These studies indicate that there is a relation between green space and self-reported indicators of physical and mental health.

people living in greener environments report better physical and mental health. The decrease in green space could therefore have health consequences. However, it remains unknown whether living in residential environments with little green space also has negative consequences for objective health. In this explorative study we will go one step further than other studies and investigate whether the prevalence of several physician-assessed morbidity clusters is also related to the amount of green space in people's living environment. **This is the first study to investigate the relation between green space and prevalence of physician-assessed morbidity.** This study has an explorative character and takes into account a broad number of diseases highly prevalent in society.

To gain more insight into the relation between green space and physician-assessed morbidity, we investigated whether the relation varies between different socioeconomic groups and different socioeconomic groups. We hypothesise that the relation is stronger for elderly people and children than adults because, as a result of their lower mobility, they spend more time in the vicinity of their home, resulting in higher exposure to green space in their living environment. The same applies to people with a lower socioeconomic status (SES), whose activities and social contacts are situated close to their homes.^{11, 12} Therefore we also hypothesise that people with a lower SES are more exposed to the green space in their living environment. Finally, the relation was analysed for different levels of urbanicity to investigate whether the relation varies between urban and rural areas.

INTRODUCTION

As a result of increasing urbanisation, combined with a planning policy of spatial densification, more people face the prospect of living in residential environments with little green space. At the same time, **increasing evidence shows that green space has beneficial effects on people's health.** Evidence has been found for a positive relation between green space and self-perceived health,¹⁻⁴ longevity,⁵ number of symptoms and the risk of psychiatric morbidity.⁶ Access to a garden and shorter distances to green areas from the dwelling were associated with less stress and a lower likelihood of obesity.⁷ Experimental studies showed that there is a positive relation between green space and restoration from stress and mental fatigue. More specific, **exposure to nature has been found to have a positive effect on mood, concentration, self-discipline and physiological stress.**⁷⁻¹⁰

METHODS

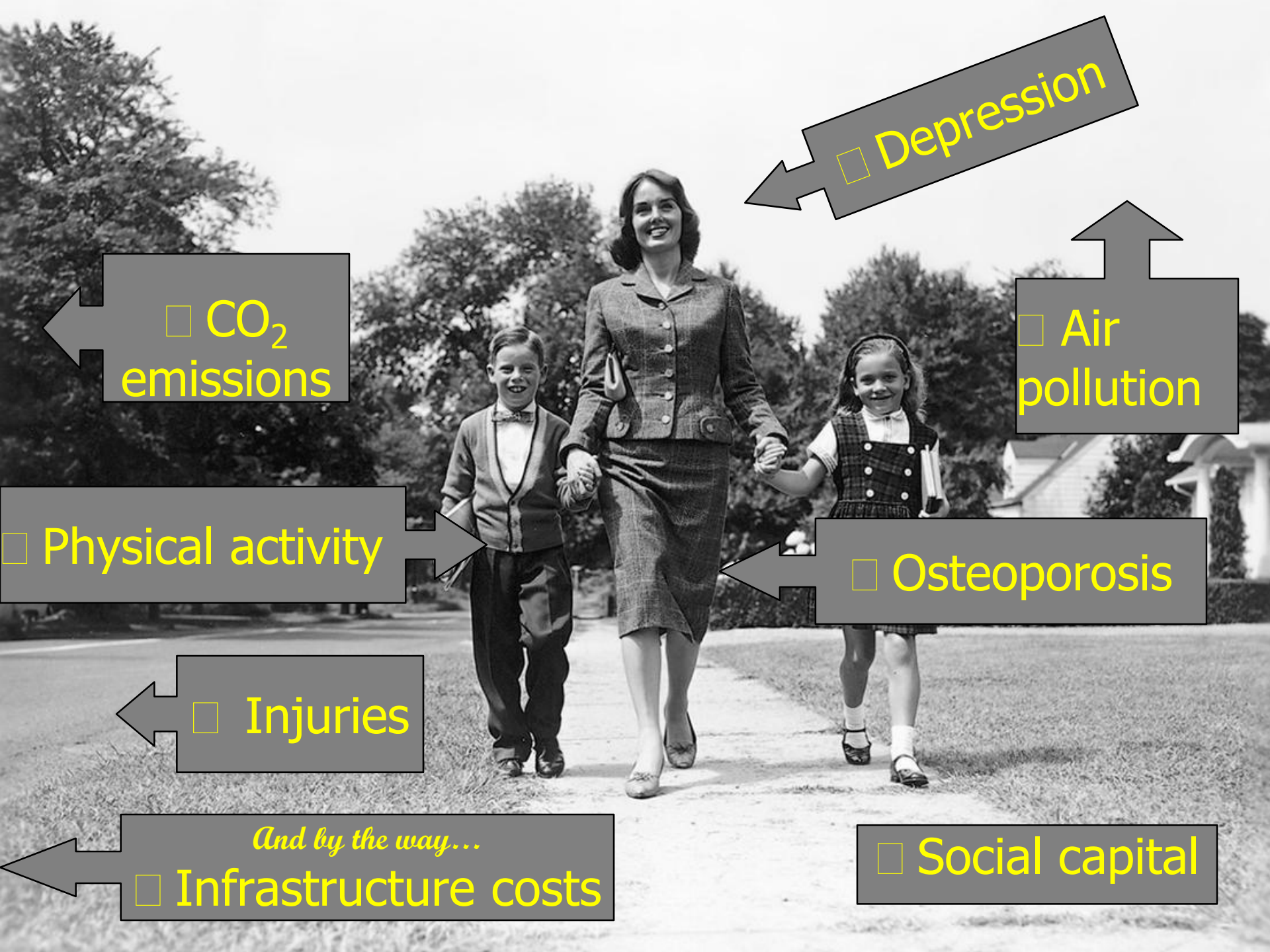
For this study data from 195 general practices were combined with data from the second Dutch National Survey in General Practice (DNSGP-2), which included a nationwide, representative sample of 104 general practices with 195 GPs and a practice population of approximately 400 000 enlisted people, who were representative for the Dutch population in terms of age, gender and type of health insurance.¹⁹ For this study data from 96 practices that recorded morbidity for a full period of 12 months or more were used. The selection had no significant effect on the representativeness of the data, because after the selection the sample was still representative for the Dutch population.¹⁹ Only people who had been registered in the study (n = 345 143) were included, because we

There is increasing evidence for a positive relation between green space in people's living environment and self-reported indicators of physical and mental health

The annual prevalence rate of 15 of the 24 disease clusters was lower in living environments with more green space in a 1km radius.

increasing evidence shows that green space has beneficial effects on people's health.

exposure to nature has been found to have a positive effect on mood, concentration, self-discipline and physiological stress.



☐ Depression

☐ CO₂ emissions

☐ Air pollution

☐ Physical activity

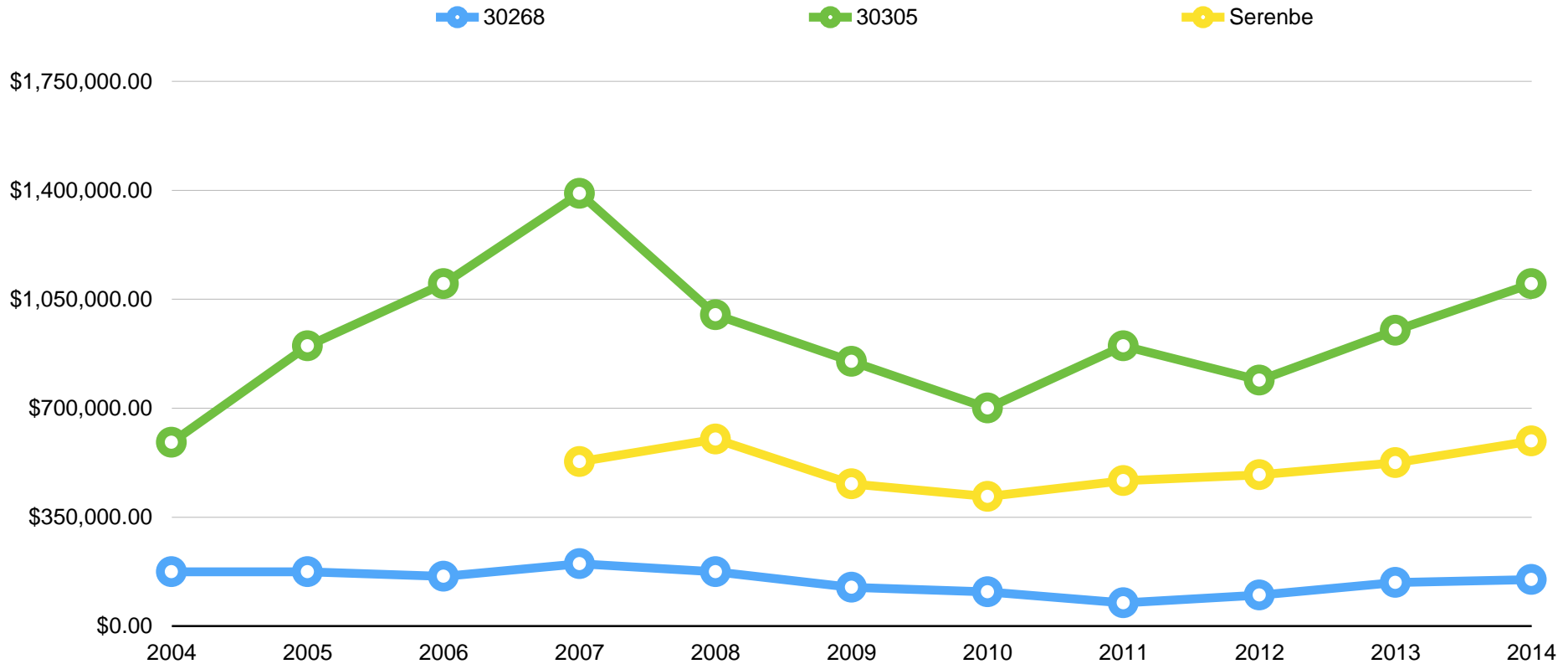
☐ Osteoporosis

☐ Injuries

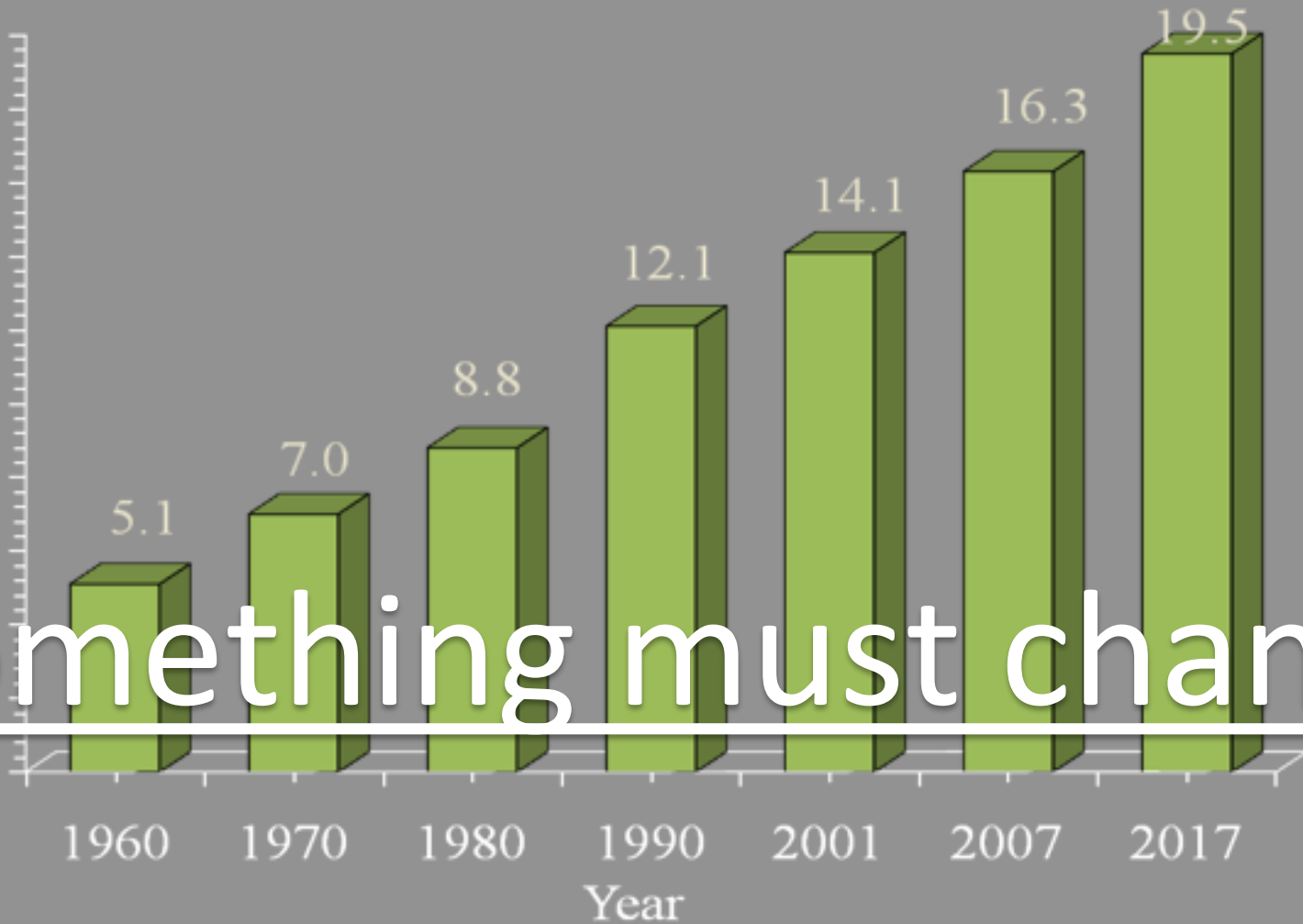
And by the way...

☐ Infrastructure costs

☐ Social capital



Care Expenditures as Percent of GDP



Something must change.

What is the cost of
providing healthy places
to live?

is the cost of thoughtful planning

How can we not afford it?

Serenbe: *Living in Community*





The little girls grew up