

Public Health and the Built Environment

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**Florida Department of Health
in Broward County**



Healthy Community

- Access to safe and nutritious food
- Safe places to run, walk or bike
- Clean air and water
- Access to healthcare
- Healthy enablers- i.e. public and active transportation

At the intersection of Public Health and Transportation Promoting Healthy Transportation Policy, American Public Health Association



Florida Land Use Since WWII

- Distance to exit a neighborhood more than 2X greater
- Distance to retail over 5X greater
- The average driver spends 443 hours behind the wheel (about 11 weeks).
- Parents were 3X more likely to walk to school than their children

Pope, 1999. MMWR, 2002;51(32):701-704.





Cypress Bay
High School

3,995
Students

- 1969 - 48% of students walk or bike to school
- 2001 - less than 16% of students walk or bike to school
- 2005 - less than 8% walk or bike to school
- Since World War II, the number of schools declined 70% while average school size grew fivefold, from 127 to 653 students
- Broward has the 6th largest school district in the US with over 260,000 students in over 260 schools

National Household Travel Survey





Fear Sells

➤ KB Homes Market Research

- Research of Tampa home buyers
- Asked what they valued most in their home and community
- More space and a greater sense of security
- Over 88% want home security systems and deadbolt locks
- Safety always ranks second, *even in communities where there is virtually no crime*

As reported by Rick Lyman in NY Times, August 15, 2005.
“Living Large by Design, in the Middle of Nowhere”.



Broward County

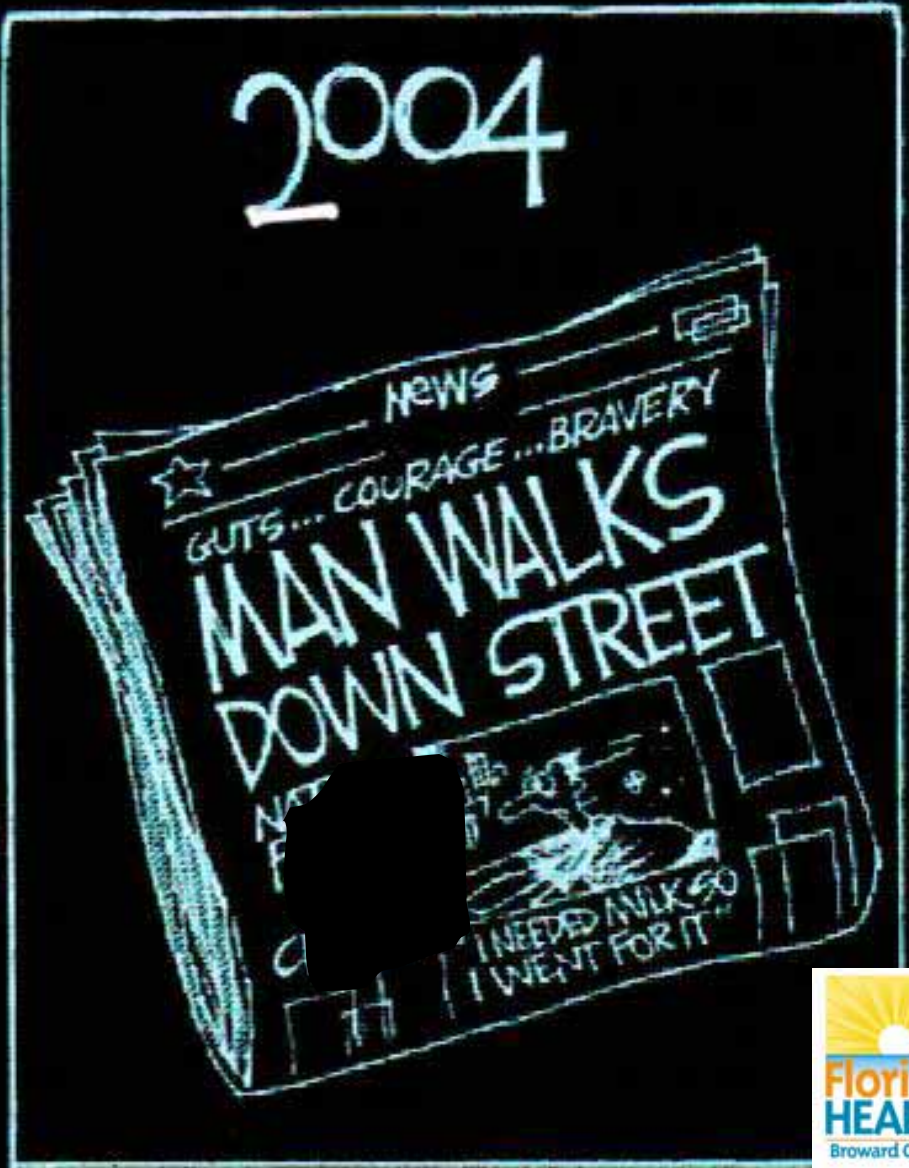
- Population is 1.75 million-17th largest County in US
- Population density is 1,446/sq mile
- Population in Broward County has increased 29% between 1990 and 2000 and another 8% between 2000 and 2010
- BCT Telephone Survey 2008
 - Two thirds (68%) that responded stated that transportation was one of their top three concerns
 - 63% favored public transit expansion as a way to improve transportation in Broward County

35th Anniversary of Walk

1969



2004

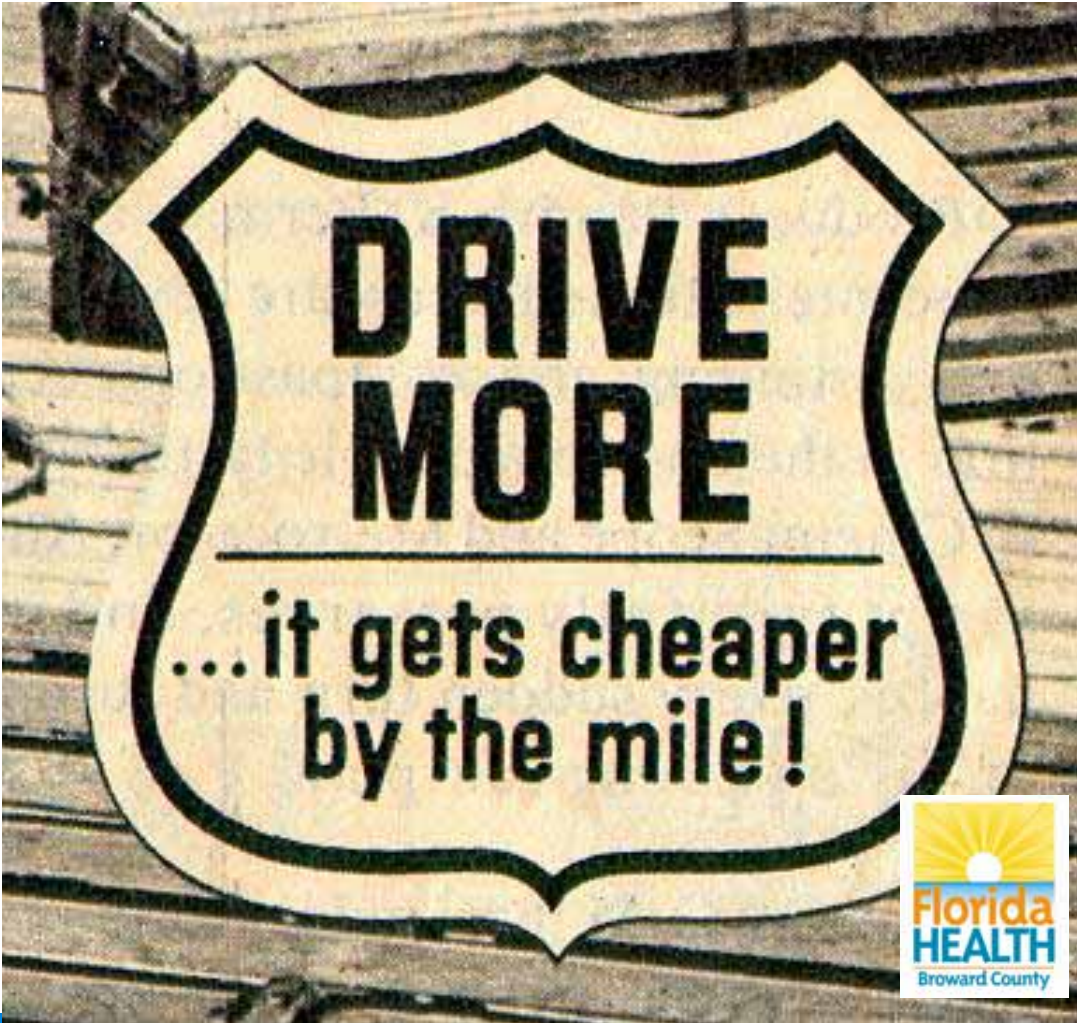


down the prices of these items. You get one of today's greatest bargains

ETHYL CORPORATION New York 17, N. Y.



BY THE SEA: Seaside towns have a special lure for travelers. The picturesque sight



Colliers, 1955



Public Health Consequences

- Pedestrian fatalities
- Cyclist fatalities
- Motor vehicle crash fatalities
- Obesity and chronic disease
- Poor air quality and respiratory illnesses



Pedestrian Injuries and Deaths

- Between 2000 and 2009, more than 47,700 pedestrians were killed in the United States and more than 688,000 pedestrians were injured over the decade
- Between 2000 and 2009, 5,163 people were killed while walking in Florida
- Florida's overall Pedestrian Danger Index ranked 1st nationally
- In Broward, pedestrian fatalities ranged from 29 to 67 per year from 2007-2011

Dangerous by Design 2011

(Transportation for America, t4america.org)



Disparities in Pedestrian Injuries and Deaths

- Nationwide, those 65 and older are 2x as likely to be killed while walking and elderly pedestrians in Florida are almost 4x more likely to die as compared to other age groups
- Pedestrian injury is the third leading cause of death by unintentional injury for children 15 and younger (CDC)
- In Florida between 2000 and 2007, the average pedestrian death rate for Hispanics was 37 percent higher than the rate for non-Hispanic whites and the African-American rate was almost 48 percent higher than for non-Hispanic whites
- The pedestrian fatality rate averages 2.91 per 100,000 among low income persons, significantly higher than the national rate of 1.6

Dangerous by Design 2011

(Transportation for America, t4america.org)



Most Dangerous Metro Areas for Pedestrians

As ranked by the Pedestrian Danger Index (PDI)

1. Orlando-Kissimmee, FL
2. Tampa-St. Petersburg-Clearwater, FL
3. Jacksonville, FL
4. Miami-Fort Lauderdale-Pompano Beach, FL
5. Riverside-San Bernardino-Ontario, CA
6. Las Vegas-Paradise, NV
7. Memphis, TN-MS-AR
8. Phoenix-Mesa-Scottsdale, AZ
9. Houston-Sugar Land-Baytown, TX
10. Dallas-Fort Worth-Arlington, TX

Dangerous by Design 2011
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Factors Related to Pedestrian Injuries and Deaths

- Most pedestrians are killed on the wider, higher capacity and high-speed arterial roads
- Vehicle speed presents the greatest threat to pedestrians
- Many arterial roads have no sidewalks and no crosswalks
- Pedestrians account for nearly 12 percent of total traffic deaths, but only 1.5% of available federal funds are being spent on pedestrian and bicycle safety

Dangerous by Design 2011
(Transportation for America, t4america.org)



**THIS ONE
RUNS ON FAT
AND SAVES YOU MONEY**



**THIS ONE
RUNS ON MONEY
AND MAKES YOU FAT**



Bicycle Fatalities

- Florida ranked # 1 in 1995, 1997, 1998, 1999, 2001, 2002, 2004, 2005, 2006, 2007
- Broward County had between 6 and 11 cyclist fatalities per year between 2007 and 2011

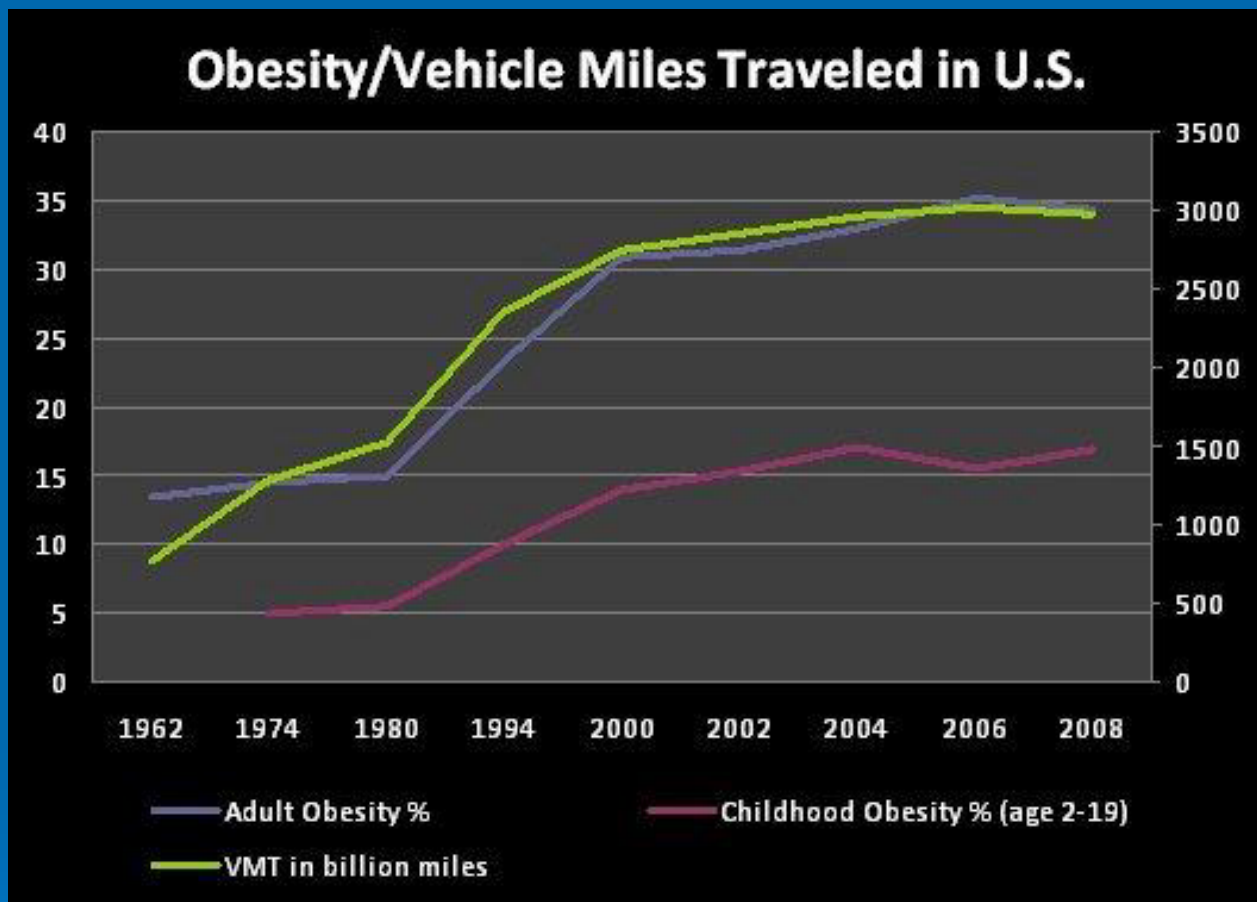


From the Fatality Analysis Reporting Systems (FARS) database at the National Highway Traffic Safety Administration (NHTSA),

Deaths due to Motor Vehicle Crashes

- Nationwide, motor vehicle-related injuries are the leading cause of death for people age 5-34
- Motor vehicle related injuries are the 6th leading cause of death in Florida and Broward County
- CDC has identified motor vehicle injury prevention as a “Winnable Battle”

Obesity vs. Vehicle Miles Traveled in US



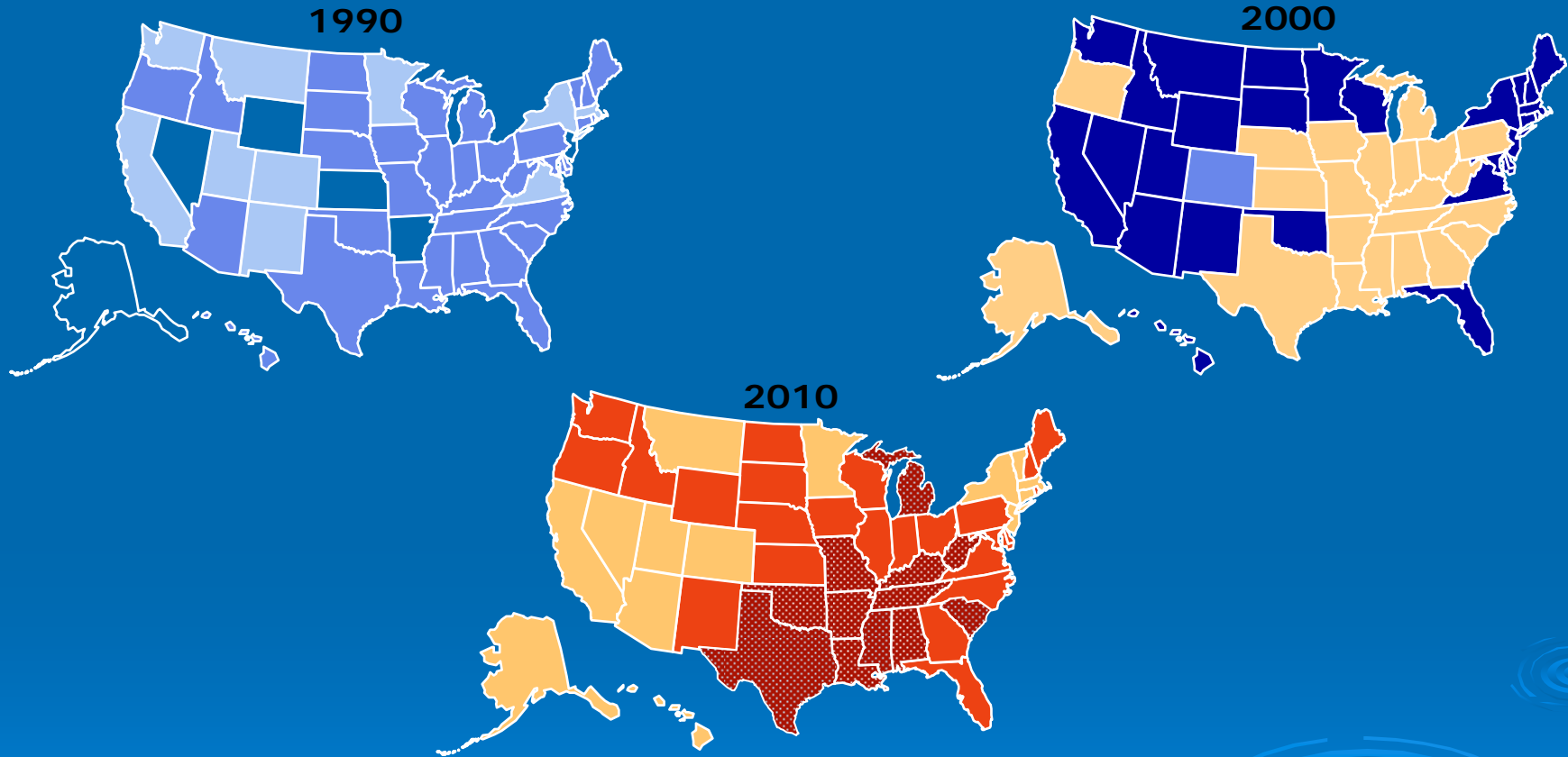
Sources: Centers for Disease Control – National Health and Nutrition Examination Survey / U.S. DOT – Federal Highway Administration, Annual Vehicle Distance Traveled in Miles & Related Data



Obesity Trends* Among U.S. Adults

BRFSS, 1990, 2000, 2010

(*BMI ≥ 30 , or about 30 lbs. overweight for 5'4" person)



Lack of Physical Activity in Youth

- The 2011 Youth Risk Behavior Surveillance Survey (YBRSS) (grades 9-12) indicates that only 41.9% of students in Broward County were physically active for 1 hour or more on 5 or more of the past 7 days
- 29% of Broward middle school students and 40% of high school students reported insufficient physical activity (Florida CHARTS 2012)
- Only one of four 5th graders can pass all levels of a fitness test that includes run-walking 1 mile

In Context, “Environment Shapes Health, Including Children’s Mental Health”, Richard Jackson & June Tester, February 2008, www.jaacap.com



Childhood Obesity

- Nearly 1 in 3 children in the U.S. are overweight or obese (17% are obese)
- This has tripled since 1980
- Current data from the CDC's Youth Tobacco Survey indicates that 11.2% of Broward middle school students have a Body Mass Index (BMI) at or above 95th percentile (an indicator of obesity). This is up from 6.9% in 2006
- There are also significant racial and ethnic disparities in the prevalence of childhood obesity
- The health risks associated with childhood obesity include Type II diabetes, cardiovascular disease and other conditions normally associated with adult chronic disease



Lack of Physical Activity in Adults

- One third of Broward adults reported meeting the moderate physical activity recommendations. (2007 BRFSS)
- One quarter of Broward adults reported meeting the vigorous physical activity recommendations (2007 BRFSS)

Adult Obesity and Chronic Disease

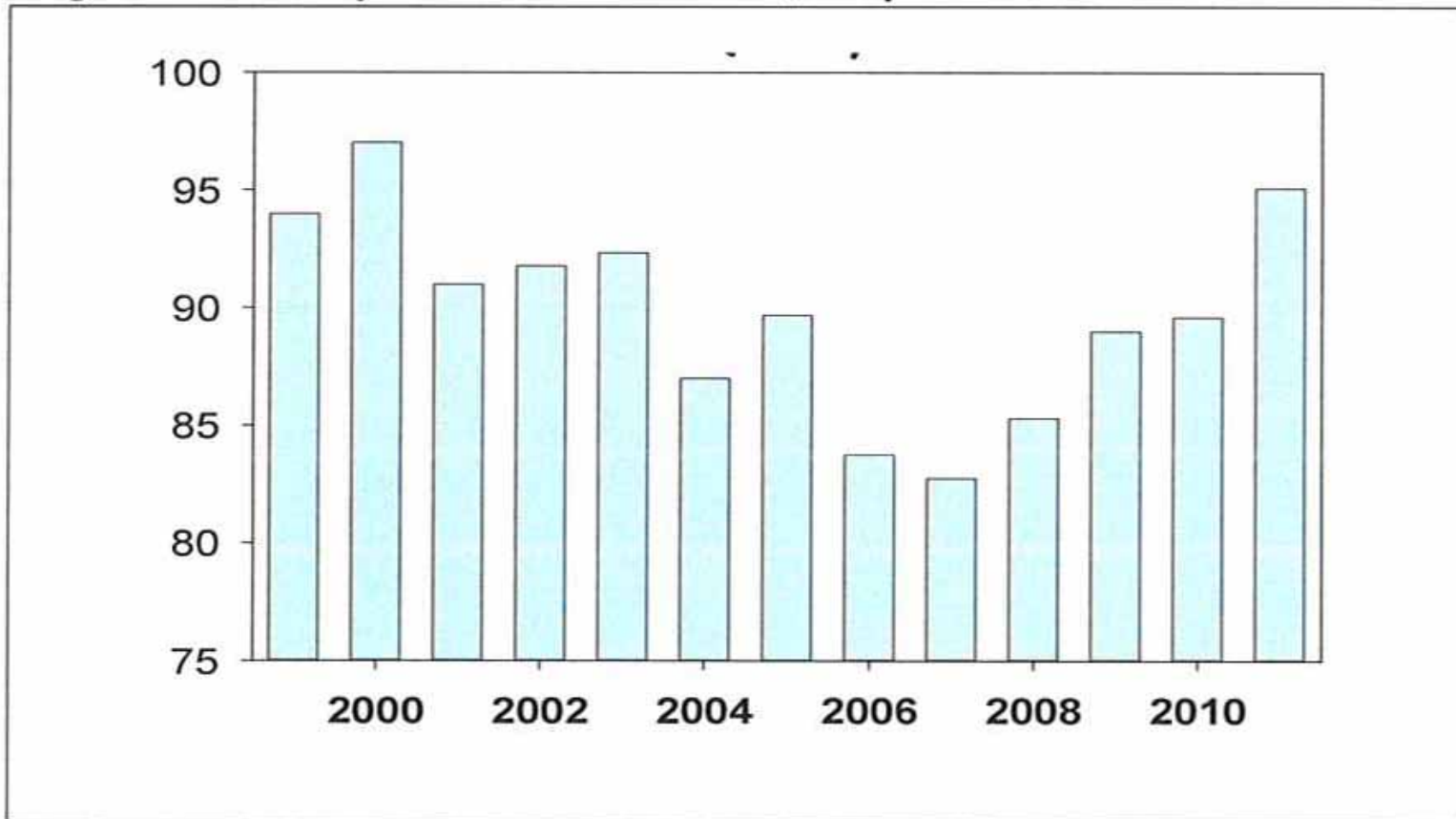
- According to the 2010 BRFSS, 28% of adults in Broward county are obese as compared to 21% in 2002
- According to the 2010 BRFSS, 6.8% of adults in Broward County reported being diagnosed with diabetes and 9.4% reported ever having a heart attack, stroke or angina
- Heart disease, stroke and diabetes are among the top five leading causes of death nationally, in Florida and Broward County

Air Quality

- The percent of population living within 500 feet of a busy roadway in Broward County in 2010 was 16.8%, the highest in the State
- The percent of schools and daycares within 500 feet of a busy roadway in Broward County in 2010 was 36.4%, the highest in the State
- According to the 2007 BRFSS, 20.4% of adults reduced or changed outdoor activity because the air quality was bad

Air Quality

Figure 4. % of Days When Outdoor Air Quality Was Good



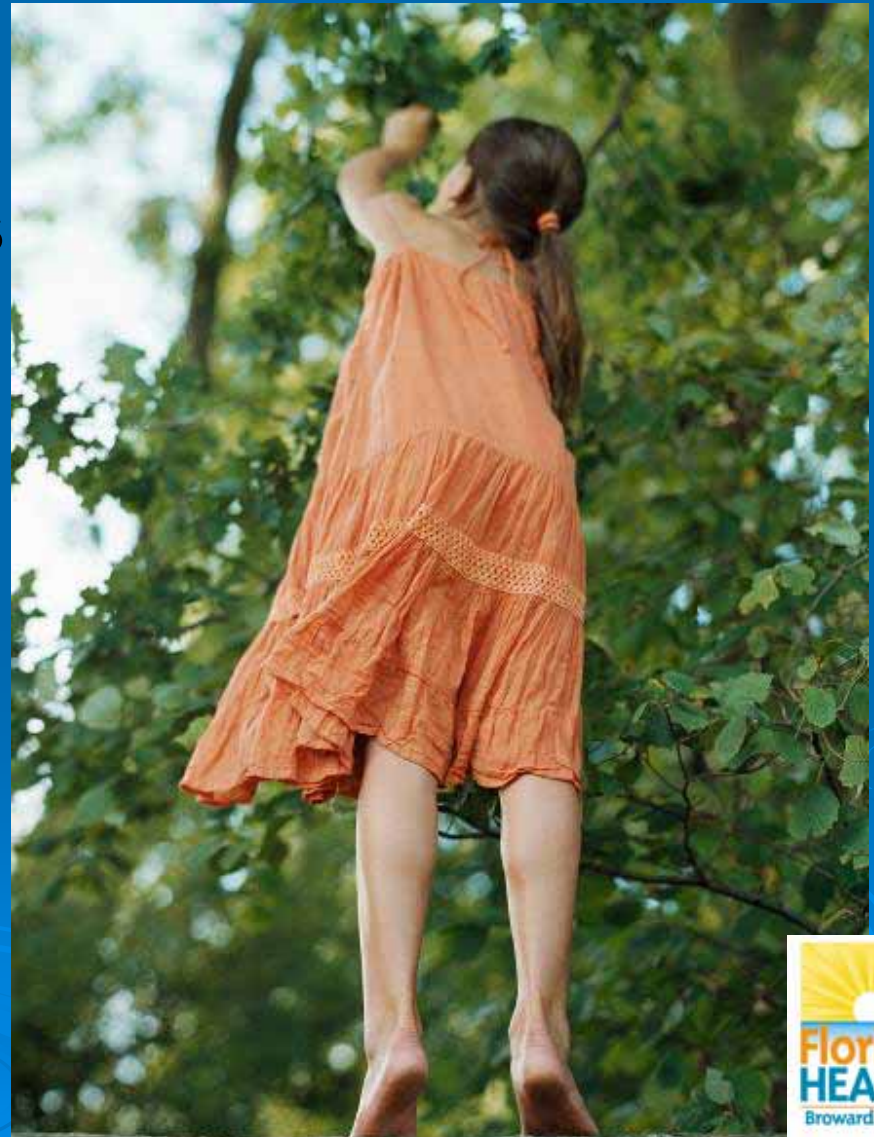
Source: Environmental Protection and Growth Management Department;
www.broward.org/environment/

Asthma

- Epidemiologic studies have found consistent associations between living in proximity to a busy roadway and respiratory disease symptoms, including asthma, and lung function measures
- The 2011 Youth Risk Behavior Surveillance Survey (YBRSS) (grades 9-12) indicates that 19.3% of students were ever told by a doctor that they had asthma
- According to the 2010 BRFSS, 6.9% of adults in Broward County currently have asthma

Sustainable Florida

”A State that meets the needs of the present without compromising the ability of future generations to meet their own needs.”



Sustainable Happiness

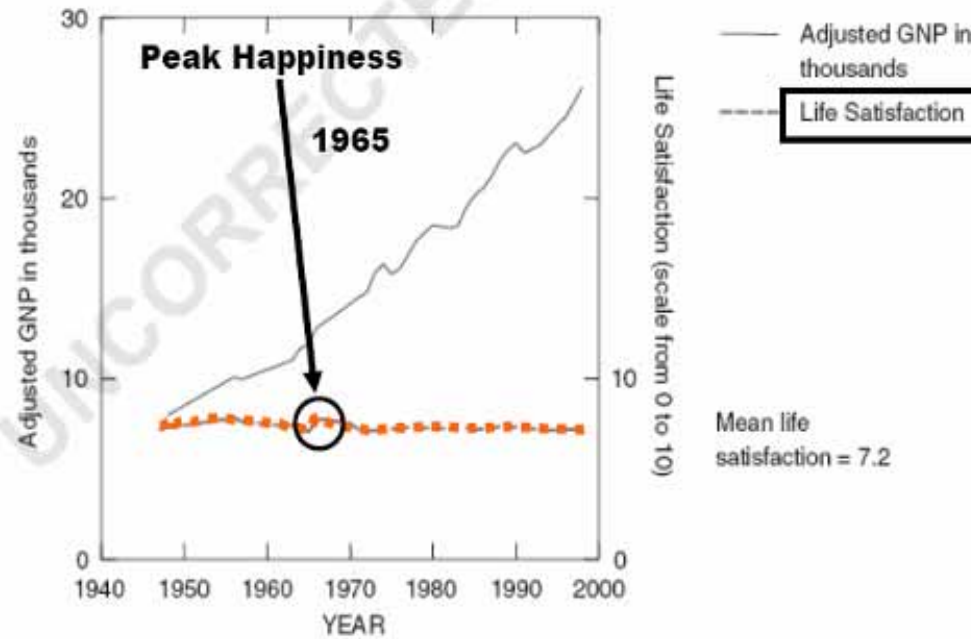


Fig. 1. U.S. gross national product (GNP) and mean life satisfaction from 1947 to 1998.



Website: <http://www.gpiatlantic.org/conference/papers/obrien.pdf>

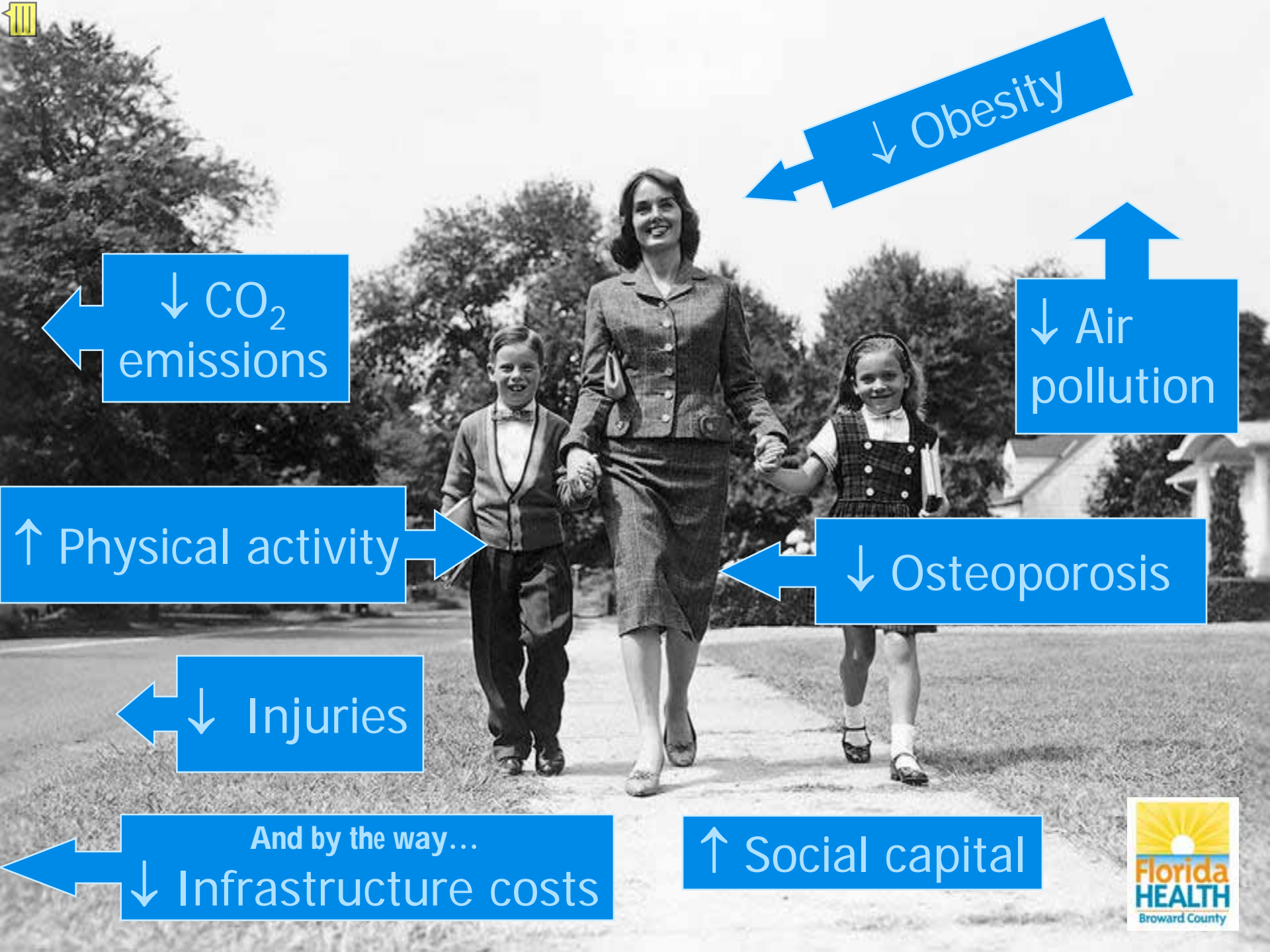
Plan for Sustainable Happiness

"We invested in high-quality sidewalks, pedestrian streets, parks, bicycle paths, libraries; ... All our everyday efforts have one objective: **Happiness.**"



Enrique Peñalosa,
Former Mayor of Bogota, Columbia





↓ Obesity

↓ CO₂ emissions

↓ Air pollution

↑ Physical activity

↓ Osteoporosis

↓ Injuries

And by the way...
↓ Infrastructure costs

↑ Social capital



Pedestrian Safety is a Good Investment

- The National Safety Council estimates the comprehensive cost, including both economic costs and diminished quality of life, for each traffic death at \$4.3 million
- A recent survey by the National Association of Realtors found that most Americans would like to live in walkable communities
- A recent CEOs for Cities report found that houses with above average walkability command a premium of about \$4,000 to \$34,000 over houses with just average levels of walkability

Dangerous by Design 2011
(Transportation for America, t4america.org)



Healthy Design



Healthy by Design

- Traffic calming and street design
 - Slows traffic
 - Intersections with pedestrian refuge medians and pedestrian “head start” at signals
 - Reduces collisions by 20 to 70 percent
- Complete Streets
 - Considers the needs of all users i.e. ages and abilities, pedestrians and bicyclists
 - Strategy for improving safety and increasing physical activity

Dangerous by Design 2011
(Transportation for America, t4america.org)



Healthy by Design

- Walkable neighborhoods with parks, public space and nearby schools
- Safe Routes to School
 - Sidewalks and crosswalks
 - Traffic enforcement
 - Bicycle and pedestrian safety education

Dangerous by Design 2011

(Transportation for America, t4america.org)



Walking School Bus



Health Impacts of Smart Growth

1. Access to recreation and open space, i.e. parks, school grounds
 - Increases physical activity and decreases chronic disease
 - Reduces stress and improves emotional health
 - Improves social cohesion
 - Improves neighborhood safety
2. Access to healthy foods, i.e. stores selling fresh produce, farmers markets, community gardens
 - Increases fruit and vegetable consumption
 - Decreases obesity and chronic disease
 - Increases social cohesion
 - Helps sustain the local economy
 - Reduces vehicle trips leading to improved air quality



Health Impacts of Smart Growth

3. Access to healthcare, i.e. via public transportation
 - Promotes preventive care
 - Reduces vehicle trips leading to improved air quality
4. Access to public transit and safe active transportation, i.e. promoting walking, biking
 - Increases physical activity and decreases chronic disease
 - Reduces cyclist and pedestrian injuries
 - Reduces vehicle trips leading to improved air quality



Health Impacts of Smart Growth

5. Access to quality affordable housing
 - Reduces negative health impacts of overcrowding
 - Reduces stress and improves emotional health
 - Reduces crime
6. Access to economic opportunity
 - Improves health and decreases mortality



Health Impacts of Smart Growth

7. Completeness of neighborhoods, i.e. daily goods and services within walking distance
 - Increases physical activity and decreases chronic disease
 - Improves social cohesion
 - Improves neighborhood safety
 - Reduces vehicle trips leading to improved air quality
8. Safe neighborhoods and public safety, i.e. lighting, density of liquor stores, sidewalks
 - Increases social cohesion
 - Decreases crime
 - Increases neighborhood safety
 - Increases physical activity and decreases chronic disease



Health Impacts of Smart Growth

9. Environmental quality, i.e. distance from busy roadways, pervious surfaces, trees
 - Reduces respiratory diseases
 - Reduces health effects of chronic noise exposure
 - Replenishes groundwater and reduces runoff
 - Provides UV protection, shade, slows traffic, increases oxygen
10. Green and sustainable development and practices
 - Reduces climate change
 - Improves air, land and water quality



The Kansas City Local Initiatives Support Corporation's (KC-LISC) Neighborhoods NOW Program

- LISC implemented redevelopment strategies in 2 neighborhoods and identified 2 comparison neighborhoods
- Physical environment, social networks, physical activity behavior, and health at neighborhood and individual level were assessed
- Walkability and quality ratings of public spaces were better in LISC neighborhoods

Neighborhood Infrastructure, Community Dynamics, Physical Activity and Health Outcomes: A Report for KC-LISC on Four Kansas City Neighborhoods www.lisc.org



The Kansas City Local Initiatives Support Corporation's (KC-LISC) Neighborhoods NOW Program

- This correlated with more people being seen using sidewalks/streets for physical activity
- Physical activity promoted positive health outcomes while sedentary activity promoted negative ones
- Health care access had limited effects on important health measures as compared to physical activity

Neighborhood Infrastructure, Community Dynamics, Physical Activity and Health Outcomes: A Report for KC-LISC on Four Kansas City Neighborhoods www.lisc.org



Broward County Initiatives



Broward County Buses

- Bus your bike-all BC transit buses are equipped with bike racks
- Broward County Transit System:
 - 303 fixed bus routes
 - 70 community buses
 - 38 routes on weekdays
 - Public transportation in Broward County has grown much faster than the population, 5% per year from 1997-2007
 - Rolling out 49 new hybrid buses, making 25% of the fleet eco-friendly



Broward Bicycle Sharing

➤ Broward B-cycle:

- Launched in December of 2011
- Access to 275 B-cycles
- A network of bike stations
- Zero emissions
- Privately funded enterprise
- B-cycle effectively connects to mass transit



Broward B-cycle



Broward County Greenways

- Linear parks
- Countywide network of safe, clean, bicycle and equestrian paths, nature trails and waterways
- Connect each neighborhood, to conservation lands, parks and recreation facilities, cultural and historic sites, schools and business areas
- Conceptual Master Plan
 - Approved by BOCC in 2002
 - 370 miles of greenways
 - Construction in progress



Broward County Greenways

Barrier Islands



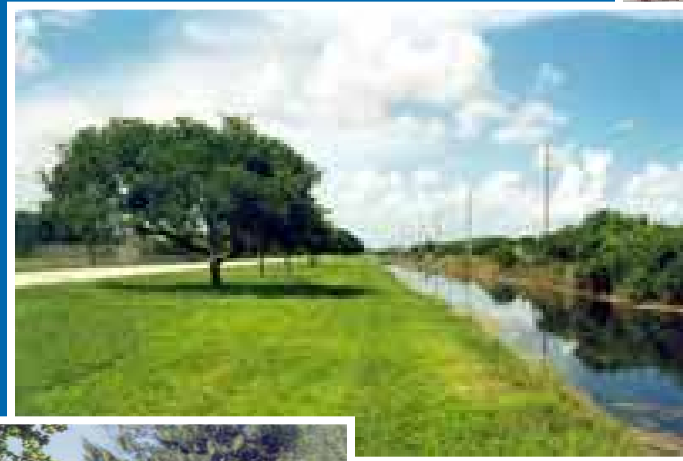
Conservation
Levee



Cypress Creek

Broward County Greenways

Dixie
Highway



Flamingo
Road and
Hiatus Road



New River

Broward Complete Streets

- In July 2012, the Broward Metropolitan Planning Organization (MPO) endorsed the Broward Complete Streets Guidelines
- The MPO is in the process of crafting a Broward Complete Streets Initiative Model Policy to be used by local governments



Las Olas All-Way Pedestrian Signal



Smart Growth Partnership: a Southeast Florida Initiative

- Educating professionals and community on Smart Growth & Complete Streets
- Drafting resolutions to support both Smart Growth & Complete Streets
- Audit of current city policies
- Develop/adopt zoning regulations



Smart Growth Principles



Broward Cities Adopting Smart Growth Resolutions

- Deerfield Beach
- Fort Lauderdale
- Lauderdale Lakes
- North Lauderdale
- Miramar
- Oakland Park
- Pompano Beach
- West Park



