



HEALTH

Family Fitness Zones Increase MVPA

**Deborah Cohen, Terry Marsh,
Stephanie Williamson, Thom McKenzie,
and Daniela Golinelli**

February 2011

Background

- **With funding from numerous sources, the Trust for Public Land worked with the County and City of Los Angeles to install Fitness Zone equipment**



- **RWJ Active Living Research Program provided funding to RAND to evaluate their impact on physical activity in 12 parks**



Study Questions

- **How well is the TPL fitness equipment used after installation?**
 - **Which age, gender, race/ethnic groups use it?**
 - **How often do they use it?**
 - **Do they use it correctly?**
- **Do more people use the park (Fitness Zones plus other activity areas)?**
 - **Are they more physically active than when the equipment was not available?**

Methods

Prior to installation of fitness equipment:

- **We measured use of the entire park using the SOPARC protocol**
 - **3 times per day (morning, noon, early evening) on 2 weekdays and 2 weekend days during one week**

After installation of Fitness Zone equipment we:

- **counted Fitness Zone users hourly for 10 hours (between 7:30AM to 7:30PM) on the 4 days**
- **surveyed Fitness Zone users plus users of other areas of the park**
- **measured during two time periods (winter 2009/10 and spring 2010)**
- **mapped the home location of survey respondents**
- **imputed missing data; used propensity scores to adjust for difference in populations measured at follow-up**

Park Characteristics

Park	County or City	1-mile Population Estimate (2000)	Acres	% Hispanic	% Black	% Poverty
48 th Street*	City	64,409	1	67.9	30.1	39.8
Alondra*	County	37,962	15.6 (84)	42.7	9.9	15.5
Athens	County	24,192	20	52.1	45.4	31.7
Cerritos*	County	26,391	14.4 (56)	19.3	8.4	6.8
Gilbert*	City	72,292	18	81.5	17.4	41.5
Ladera	County	33,213	15.9	19.1	68.6	14.9
Pathfinder	County	7,581	29	25.9	1.9	8.0
Salazar	City	42,278	8.4	97.3	0.3	61.5
Slauson*	City	48,529	3.6	83.6	14.8	41.5
South*	City	70,060	18	78.6	20.4	41.0
Steinmetz	County	19,978	12.8	52.1	1.4	11.9
Trinity	City	44,678	2	89.5	8.2	37.5
Average		40,964	14.4	59.1	18.9	29.3

Total Observations and Surveys

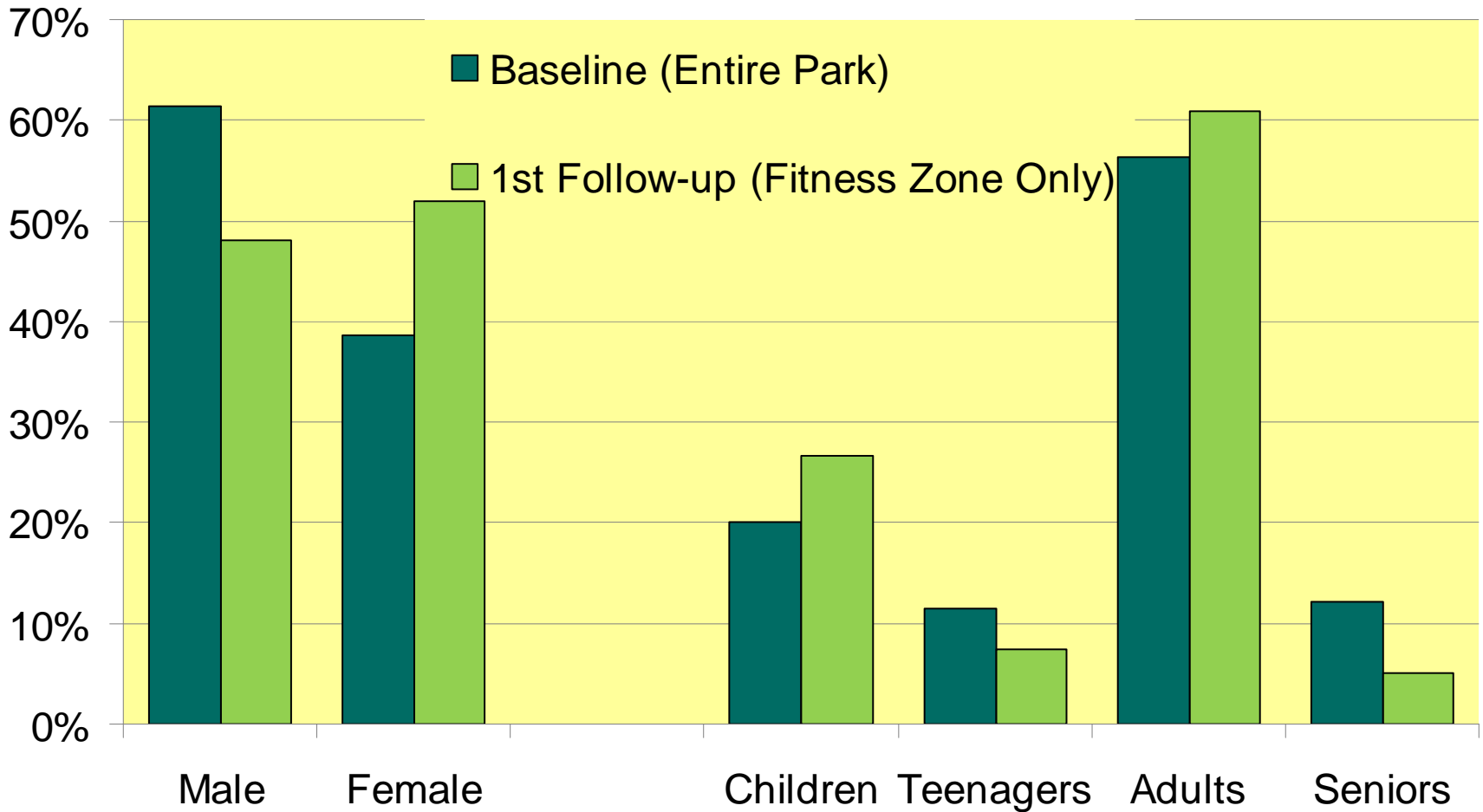
- **The 12 parks together serve a population of nearly 500,000**
- **Across three waves of observations, we counted**
 - **23,577 people in 12 parks**
 - **2,570 people in Fitness Zones**
- **We interviewed 2,637 people, including 722 in Fitness Zone areas**



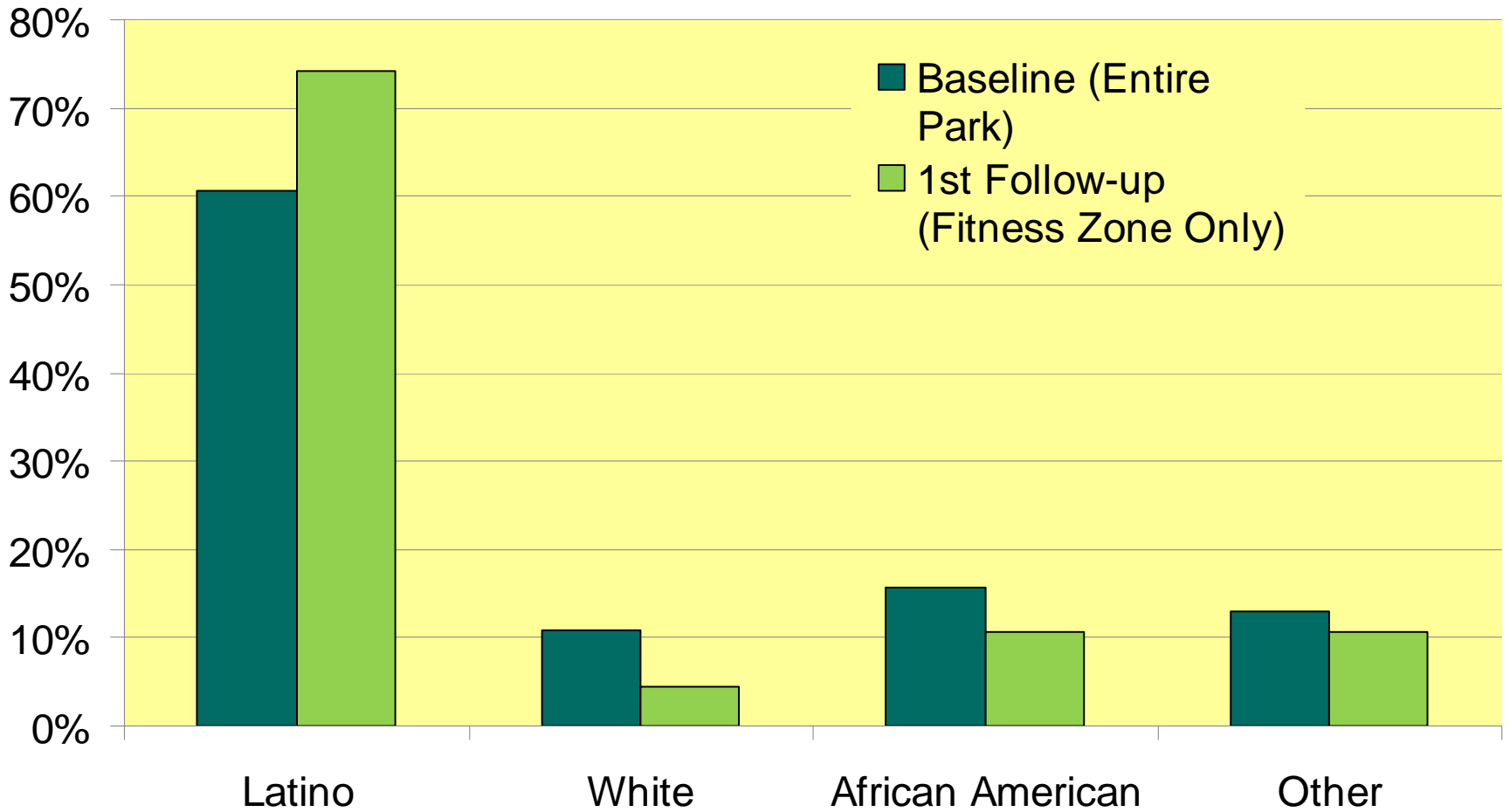
Characteristics of Fitness Zone Users vs. Others in Park

	Interviewed at Baseline	Interviewed in Fitness Zone, 1st Follow-up	Interviewed in Fitness Zone, 2nd Follow-up
Total	742	377	345
Male	45.6%	40.3%	37.7%
Female	54.4%	59.7%	62.3%
Latino	74.1%	78.2%	81.2%
African American	8.5%	8.0%	10.1%
White	12.1%	5.0%	4.1%
Asian/Other	0.8%	8.8%	4.6%
Adults	91.3%	95.1%	96.2%
Seniors	8.7%	4.9%	3.8%

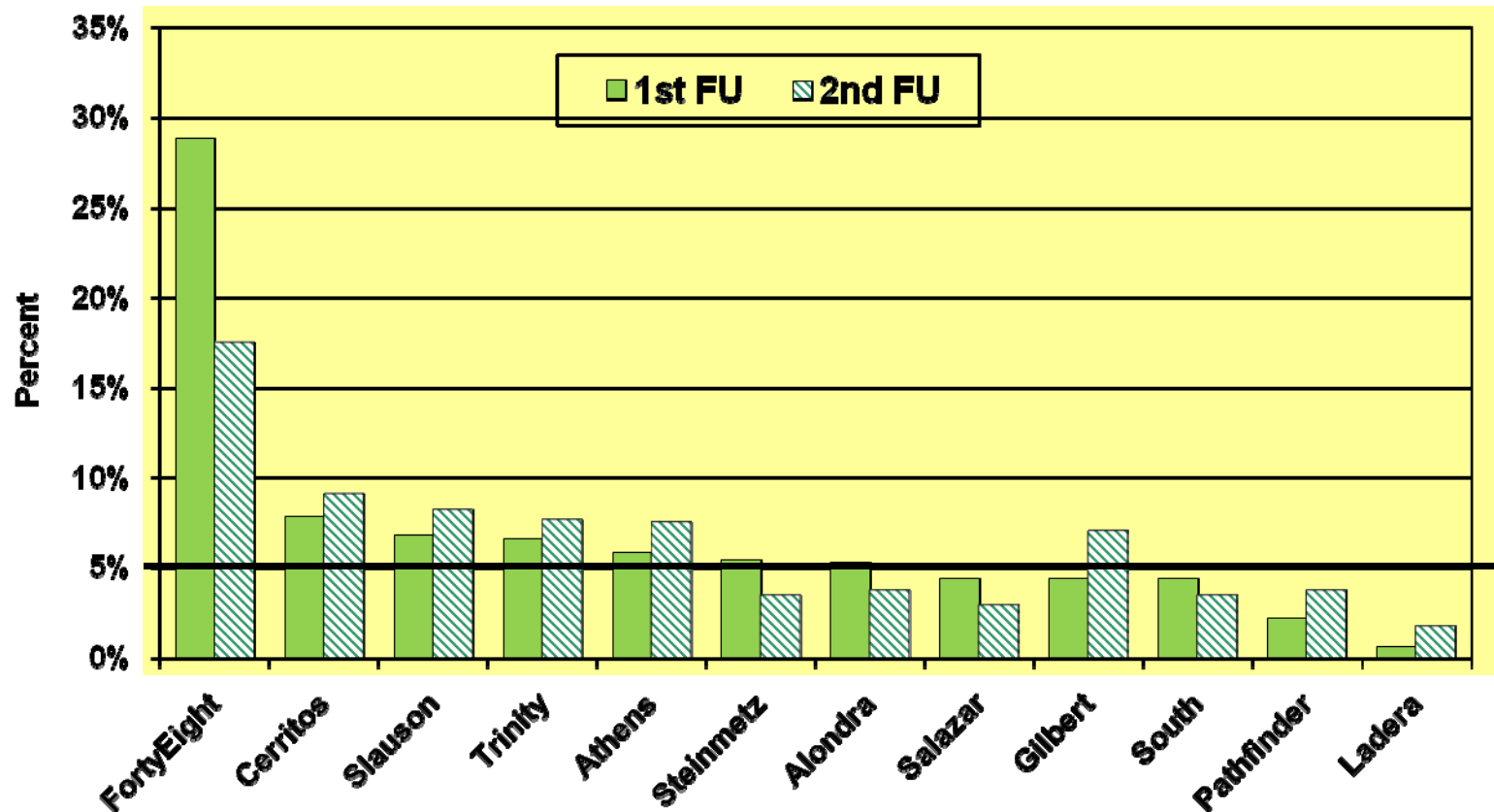
Which Age and Gender Groups Use the FZ?



Ethnicity/Race

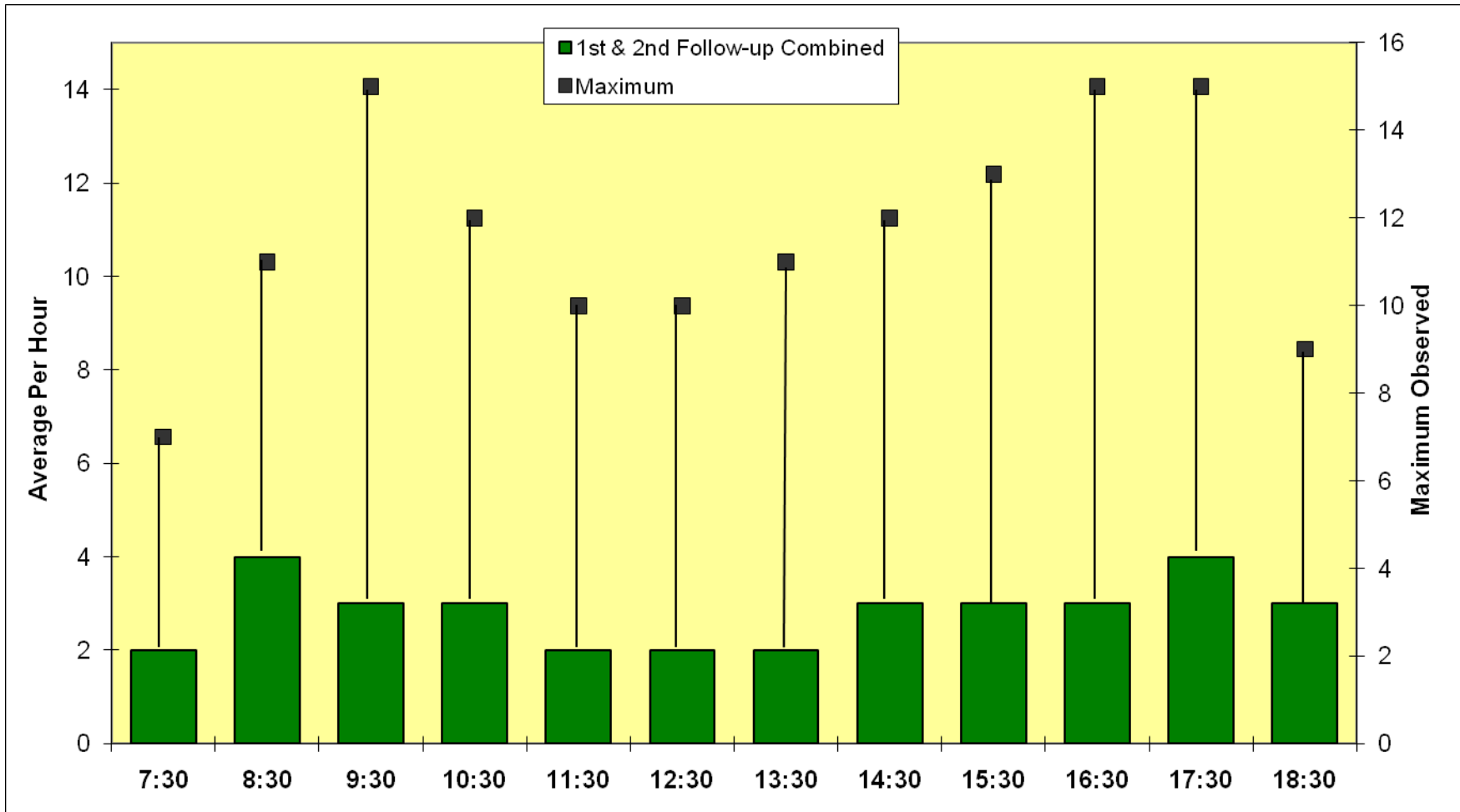


On Average, 5% of Park Users Were in the Fitness Zones

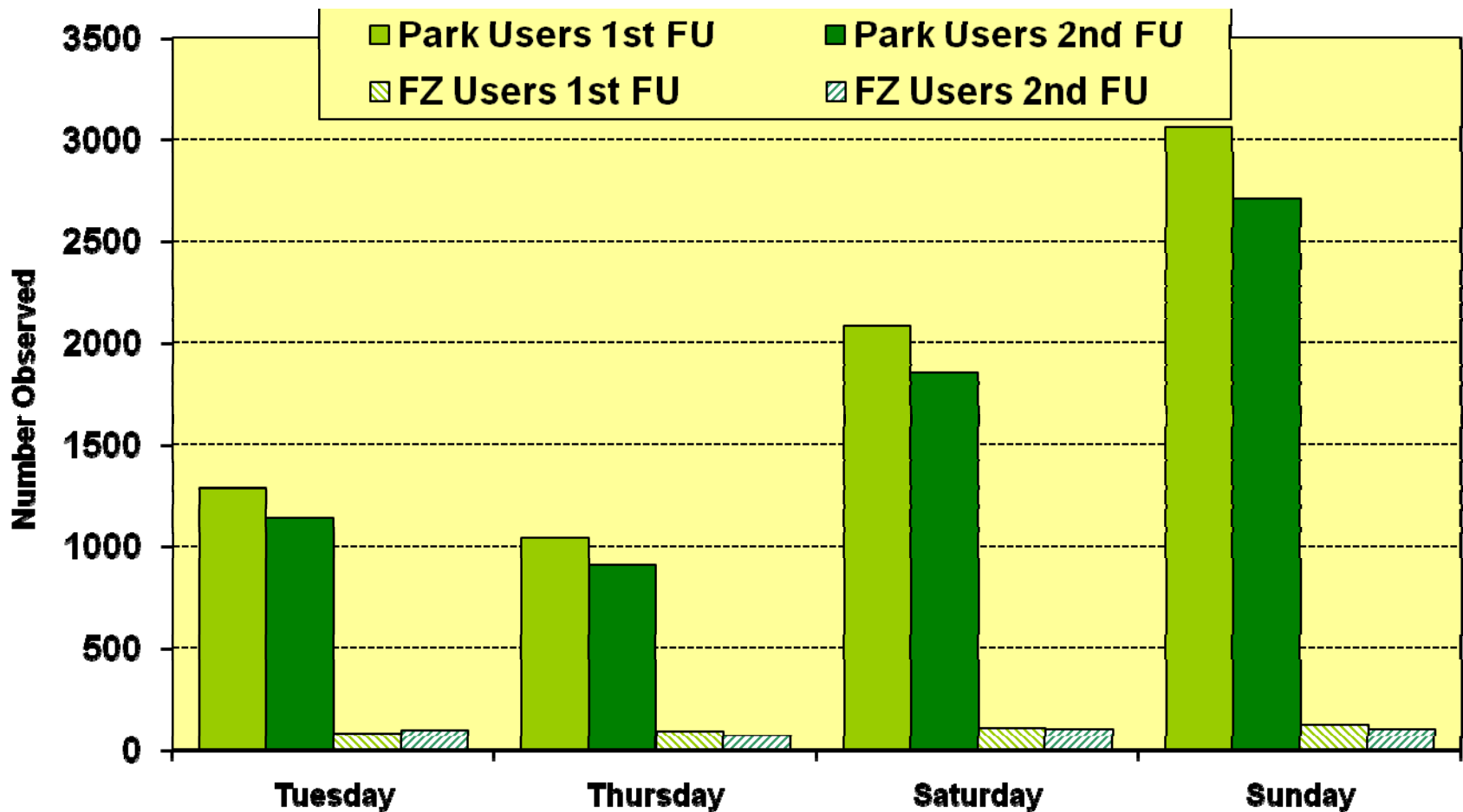


Fitness Zone Equipment Is Used All Day Long

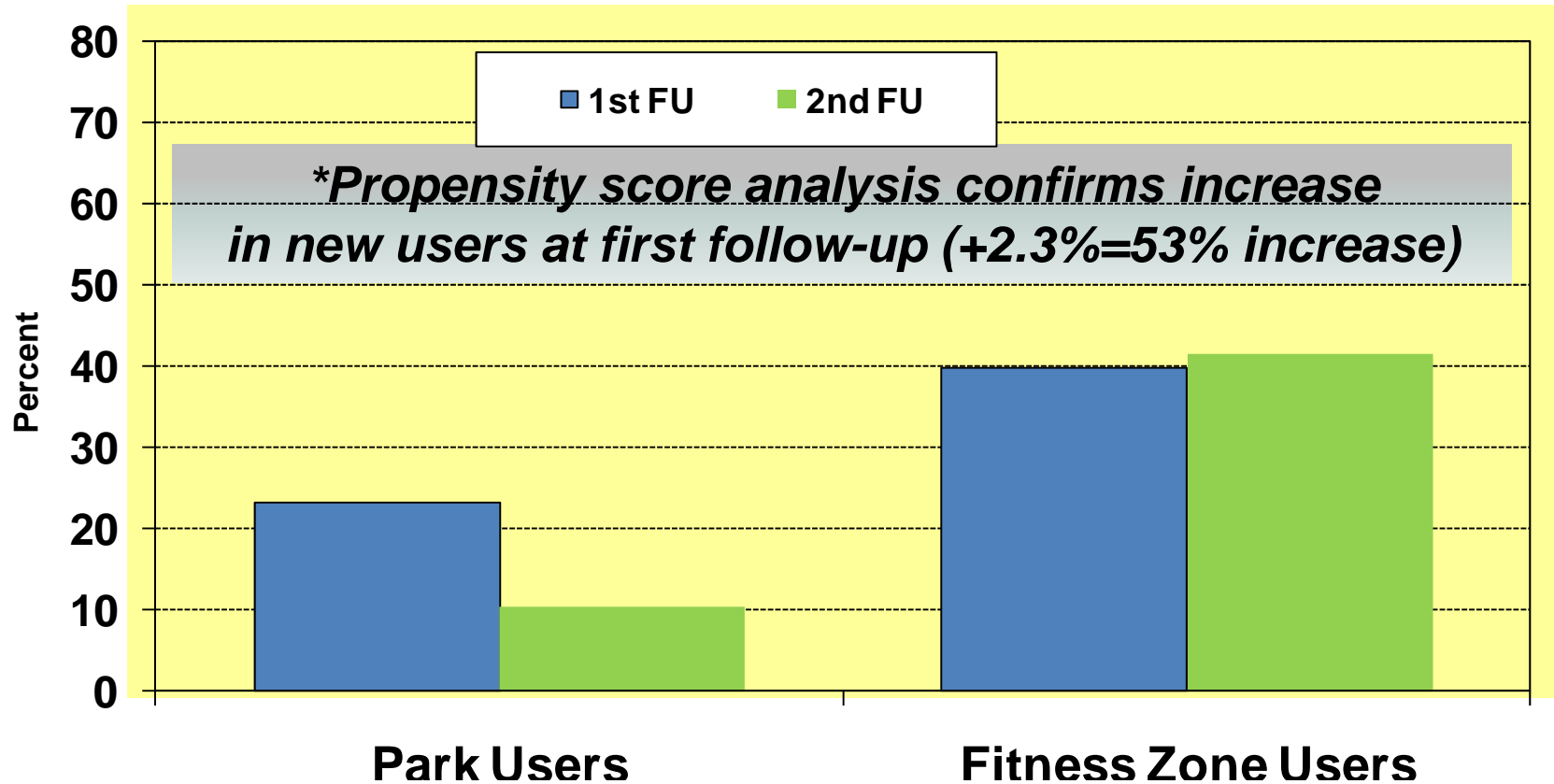
(Average Users Observed in One Scan Each Hour)



Fitness Zone Use Varies Less Than Total Park Use by Day of the Week



Percentage Coming to the Park Solely to Use Fitness Zone Equipment



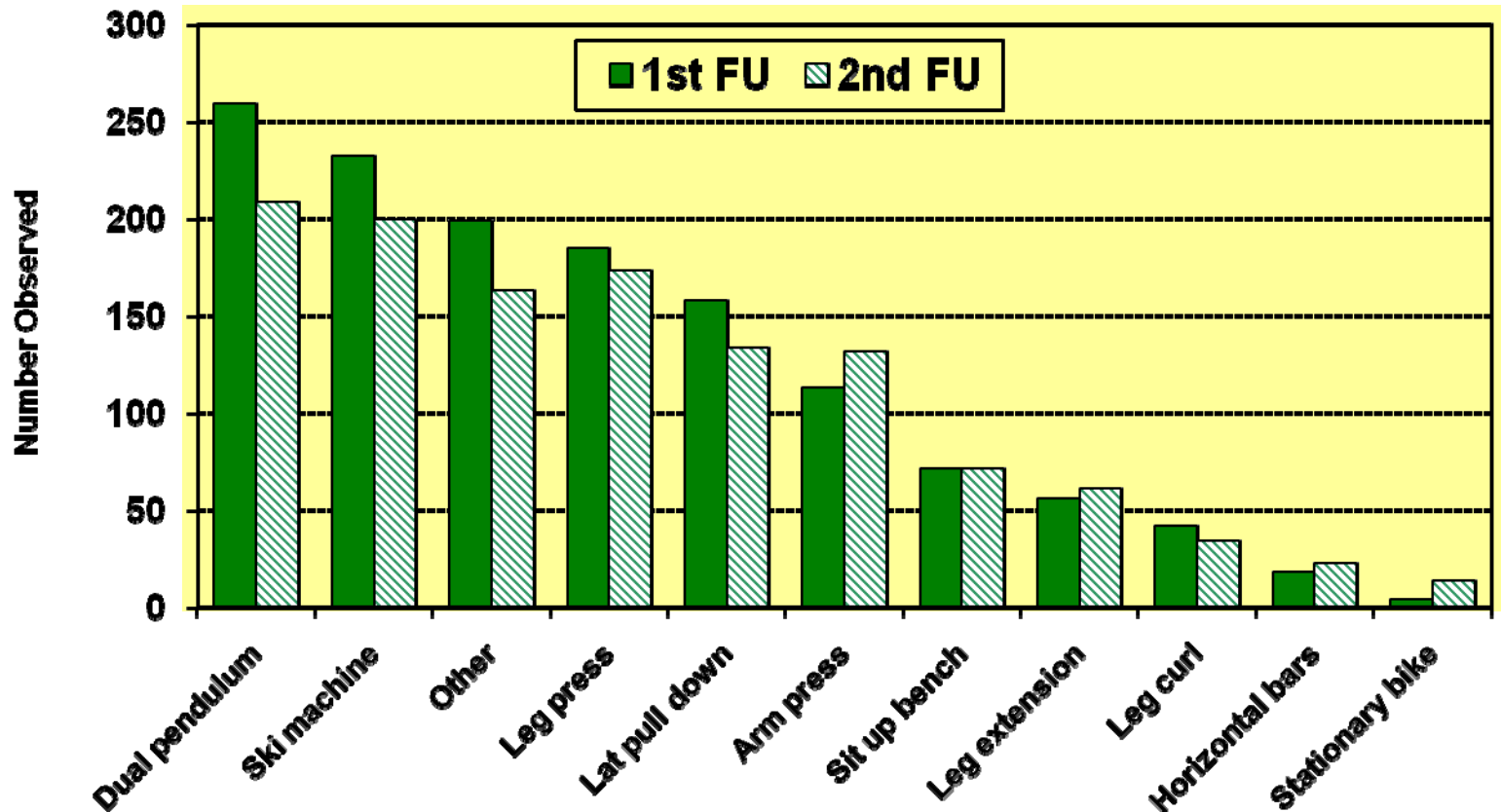
**controls for age, race, gender, ethnicity, distance from the park, participation in park activities, physical activity at work*

Is Equipment Used Correctly?

- Proper use of Fitness Zone equipment improved over time
 - 65.1% were observed using the equipment properly in the 1st follow-up compared to 71.1% in 2nd follow-up
- Sit-up bench (33.8%) and leg curl (40.5%) were least likely to be used correctly
- Horizontal bars and stationary bike were most likely to be used correctly (100%)

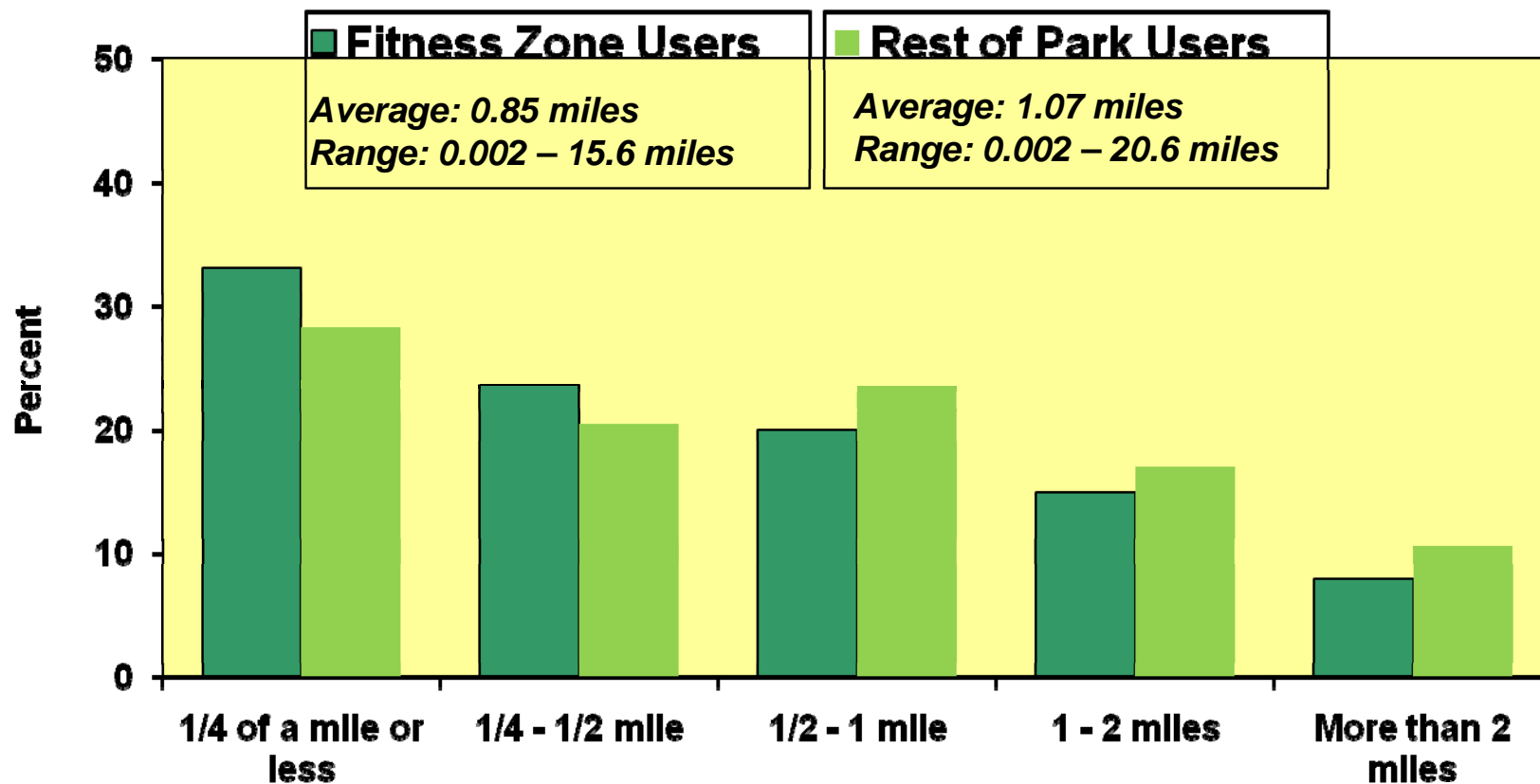


Which Equipment Is Used Most?



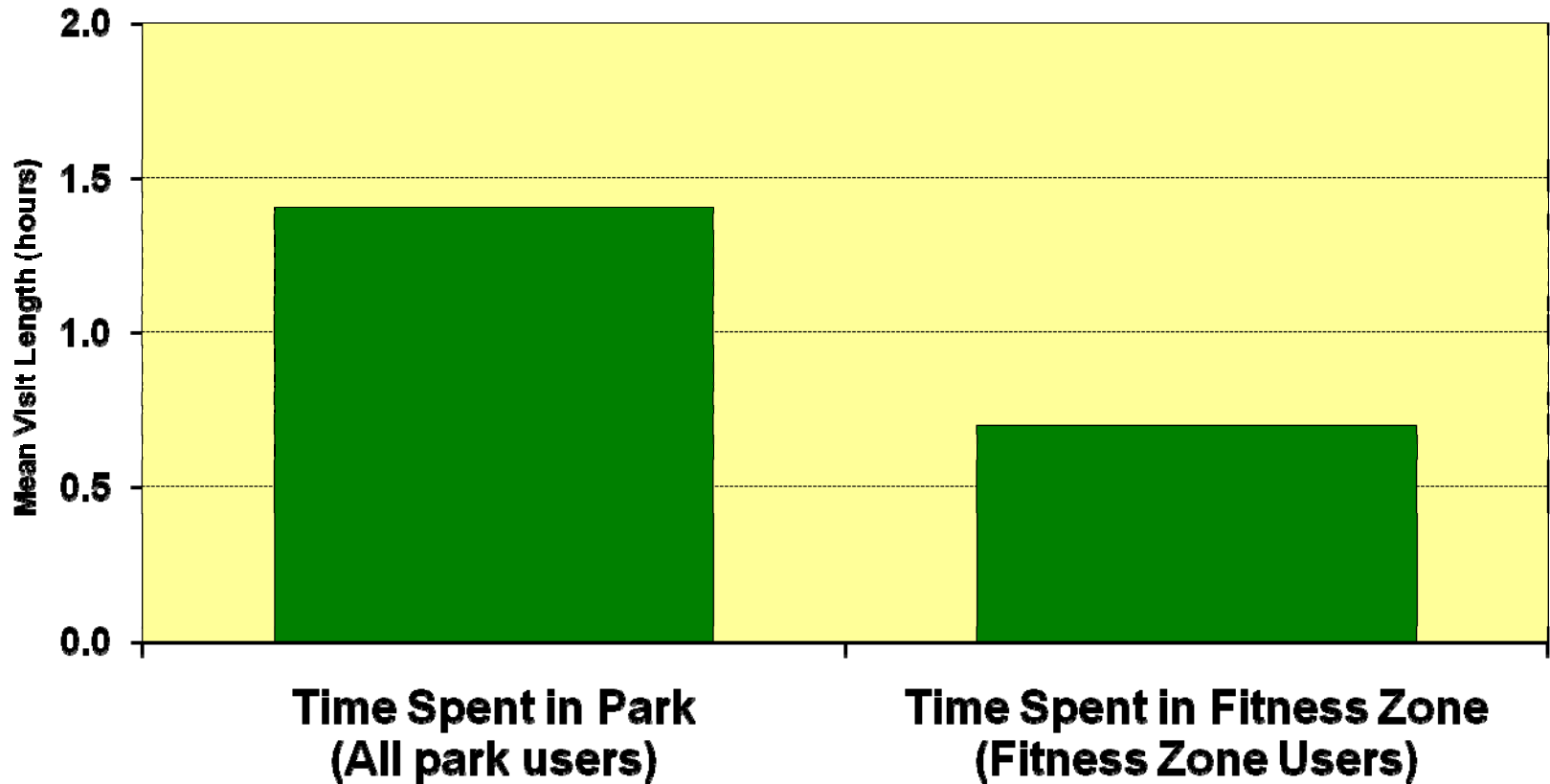
* Only 1 park with Stationary Bike (Alondra)

Distance Fitness Zone Users Live from Park ***(1st and 2nd Follow-up Combined)***

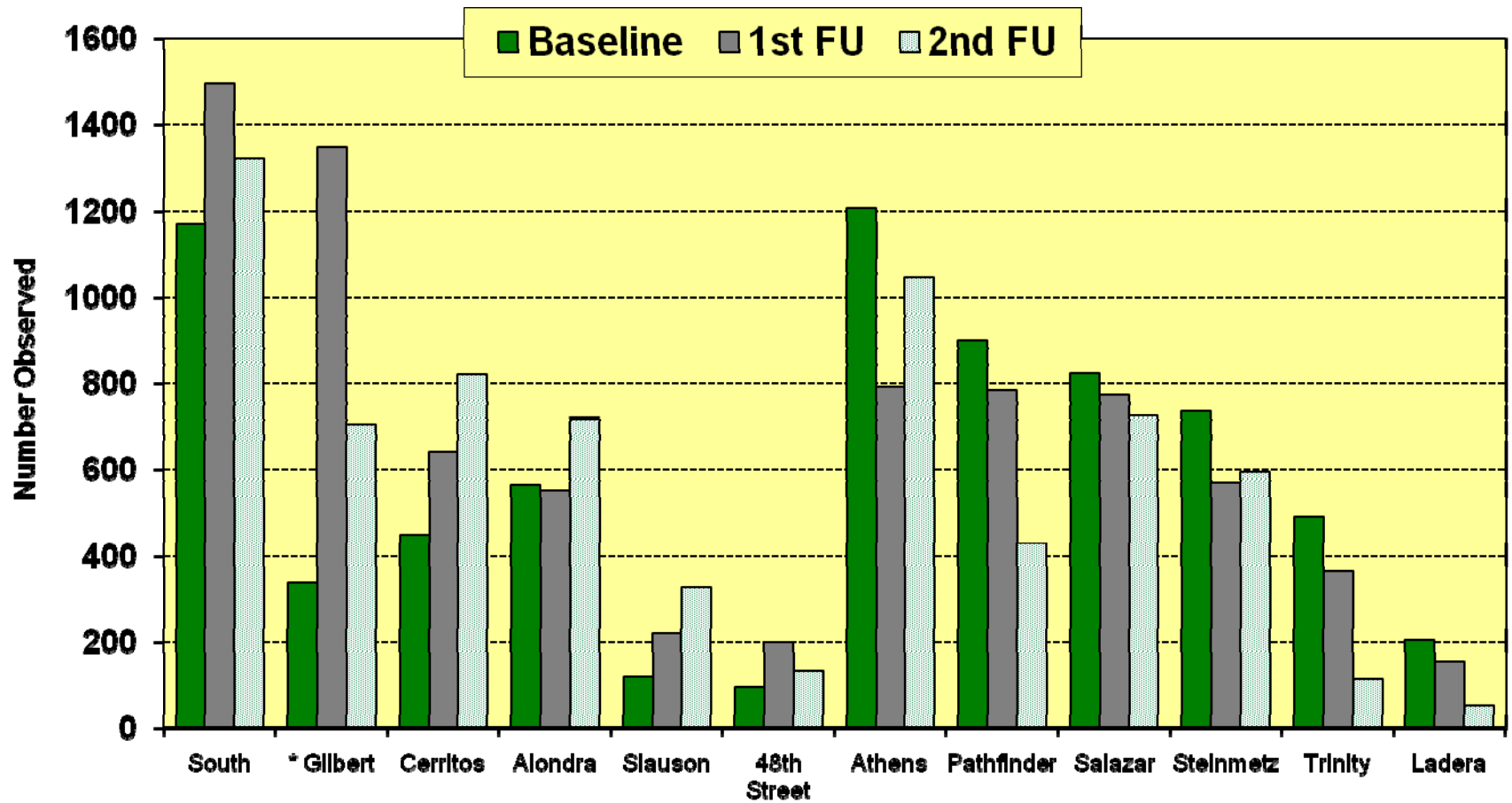


Time Spent in Fitness Zones Versus Time in the Park

(1st Follow-up)



Increases Concentrated in 6 of 12 Parks

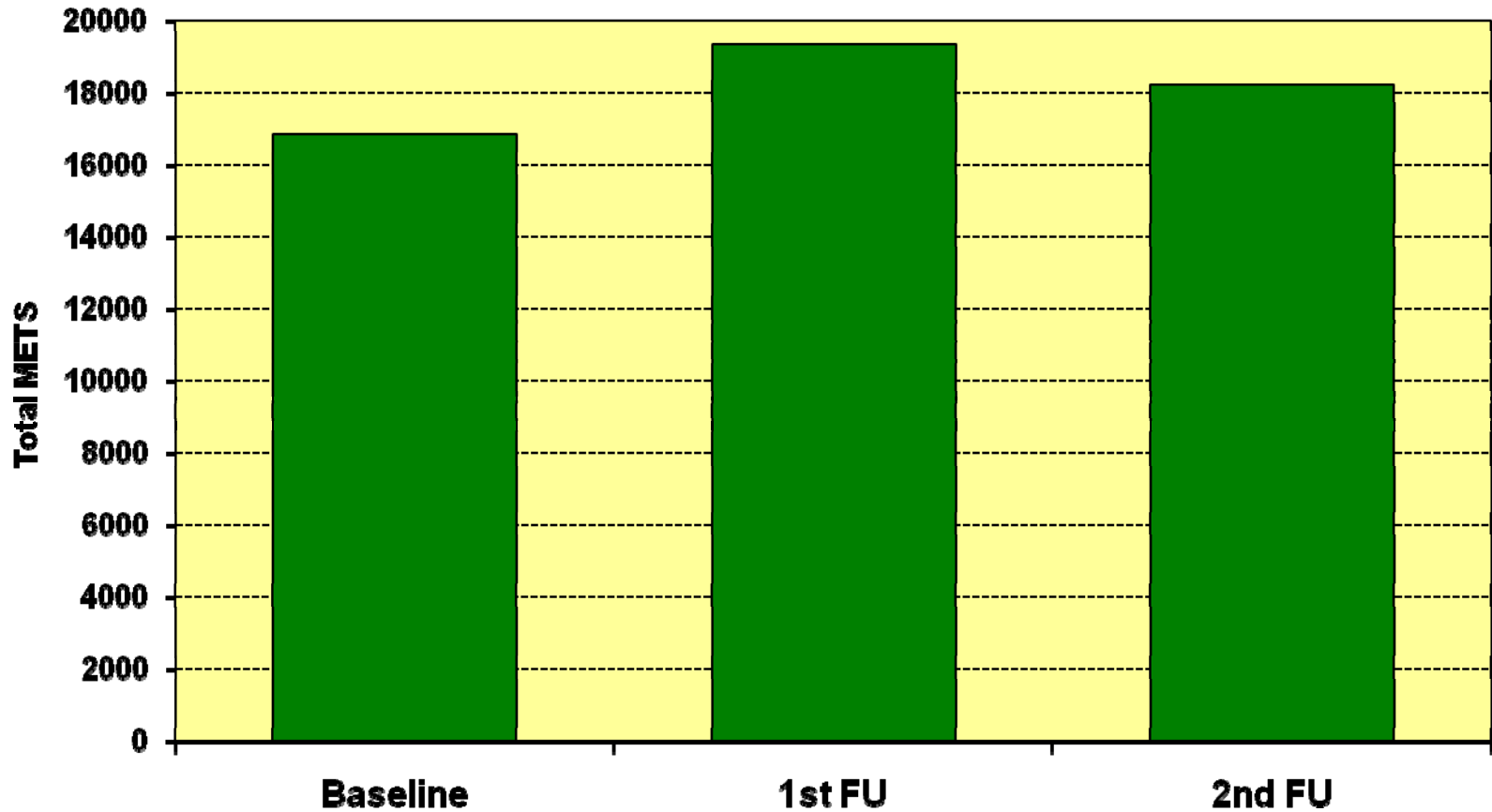


Population Density Differs in Overall Use Between Parks With and Without Increases

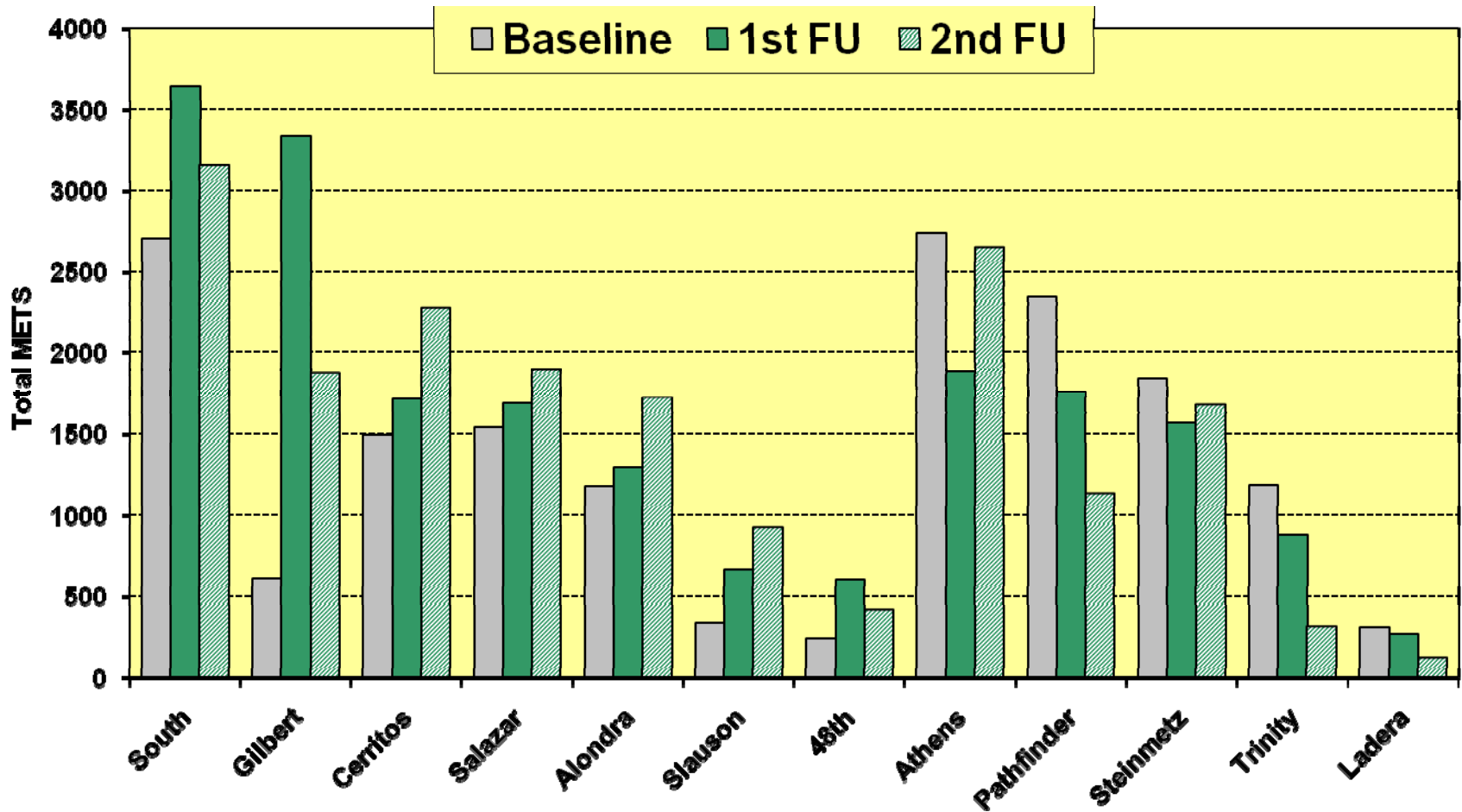
	Increased use	No increase
Number of parks with an increase in use	6	6
Average acreage	11.8	14.7
Average population density	53,274	28,653
% Latino in population	62.3%	56.0%
% Black in population	16.8%	20.9%
County vs city parks	4 city	4 county
% population in poverty	31.0%	27.6%

Total METs (12 Parks)

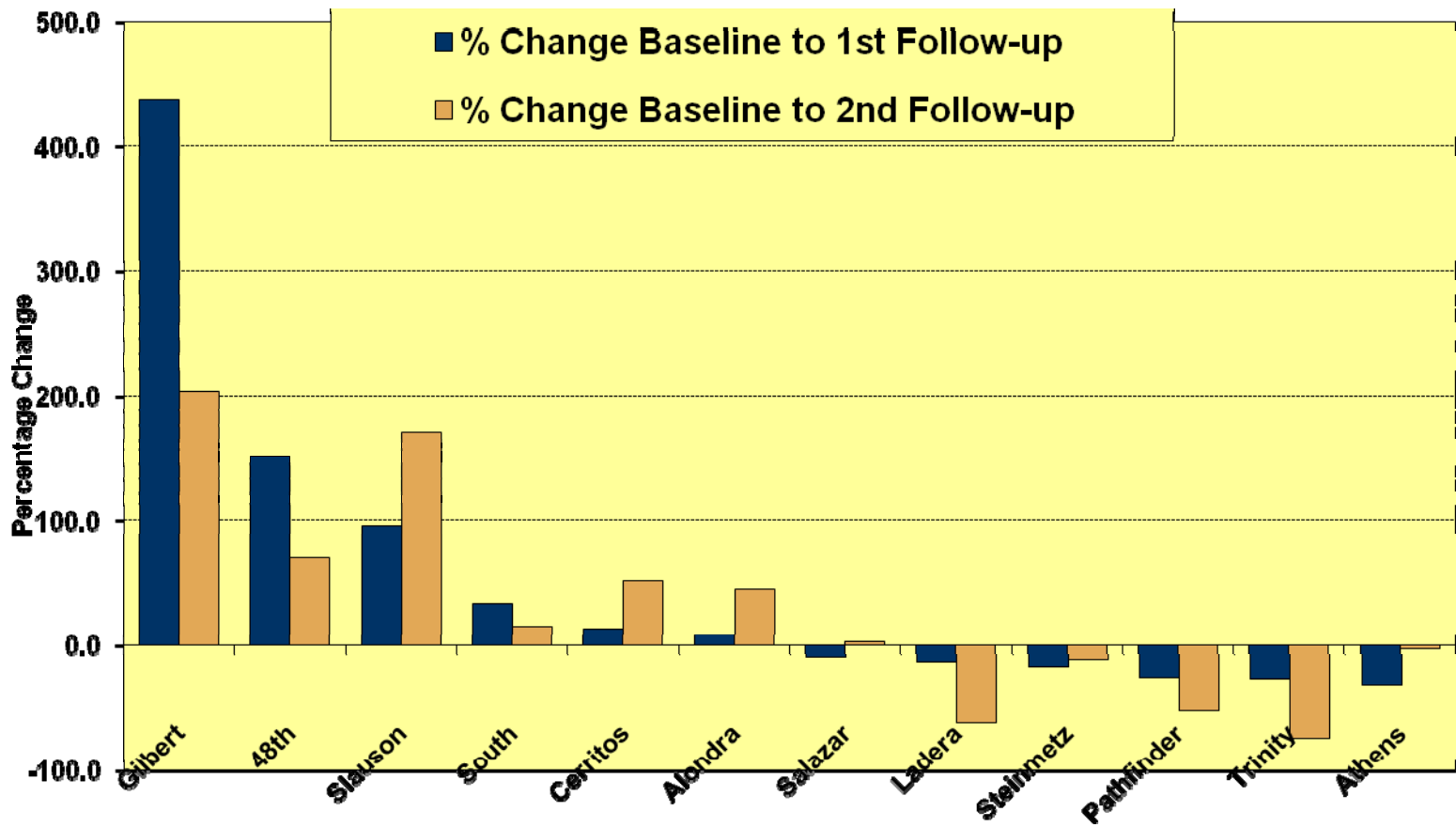
1 MET = Energy at rest for 1 hour
1.5 = Sedentary, 3.0 = Walking, 6.0 = Vigorous



METs Increased in 7 of 12 Parks



Percent Change in METs



Cost-Effectiveness is Favorable

Assumptions:

- **\$45,000 per zone for 15 years or \$3000/year**
- **If maintenance is \$2000 per year, annual cost is \$5000**
- **Assume that average METs expended between time 1 and 2 holds for 12 hours/day, 7 days/week, 48 weeks/ year**
- **Cost per MET is \$0.09/MET per FZ**
- **For adults, less than \$0.50/MET is considered cost-effective; thus FZ more cost-effective than many other evaluated physical activity interventions**

Summary

- **Fitness Zones provided benefits in some parks**
 - **Attracted new park users initially**
 - **Used throughout the day, though not all equipment used equally**
 - **FZ users exercised more and used park more frequently than other park users**
- **Greater increase in parks with greater population density**
 - **Increase in total energy expended**
 - **Park users reported that they increase exercise and visited parks more often**
- **Park users reported equipment well maintained, instructions clear**
- **Fitness Zones can provide cost-effective approach to increasing physical activity in some parks**

Limitations

- **Calculations of Fitness Zone use underestimate actual use, since scans are hourly, and Fitness Zone users stay shorter amounts of time than other park users**
- **Baseline at one park had to be estimated, considered too dangerous before FZ installed**
- **Currently uncertain whether changes due to secular trends**
- **Future analyses will compare overall park use with similar parks that did not get Fitness Zones**

Conclusions

- **Fitness Zones are an important addition, especially to small parks**
- **Recommend installing equipment most favored by users**
- **Should add outreach efforts to increase equipment use**



Thanks to the Promotoras

***All data were collected by
the Promotoras of AltaMed***

and

***Thanks to the
RWJF Active Living Research Program
and
National Heart Lung and Blood Institute, NIH***