

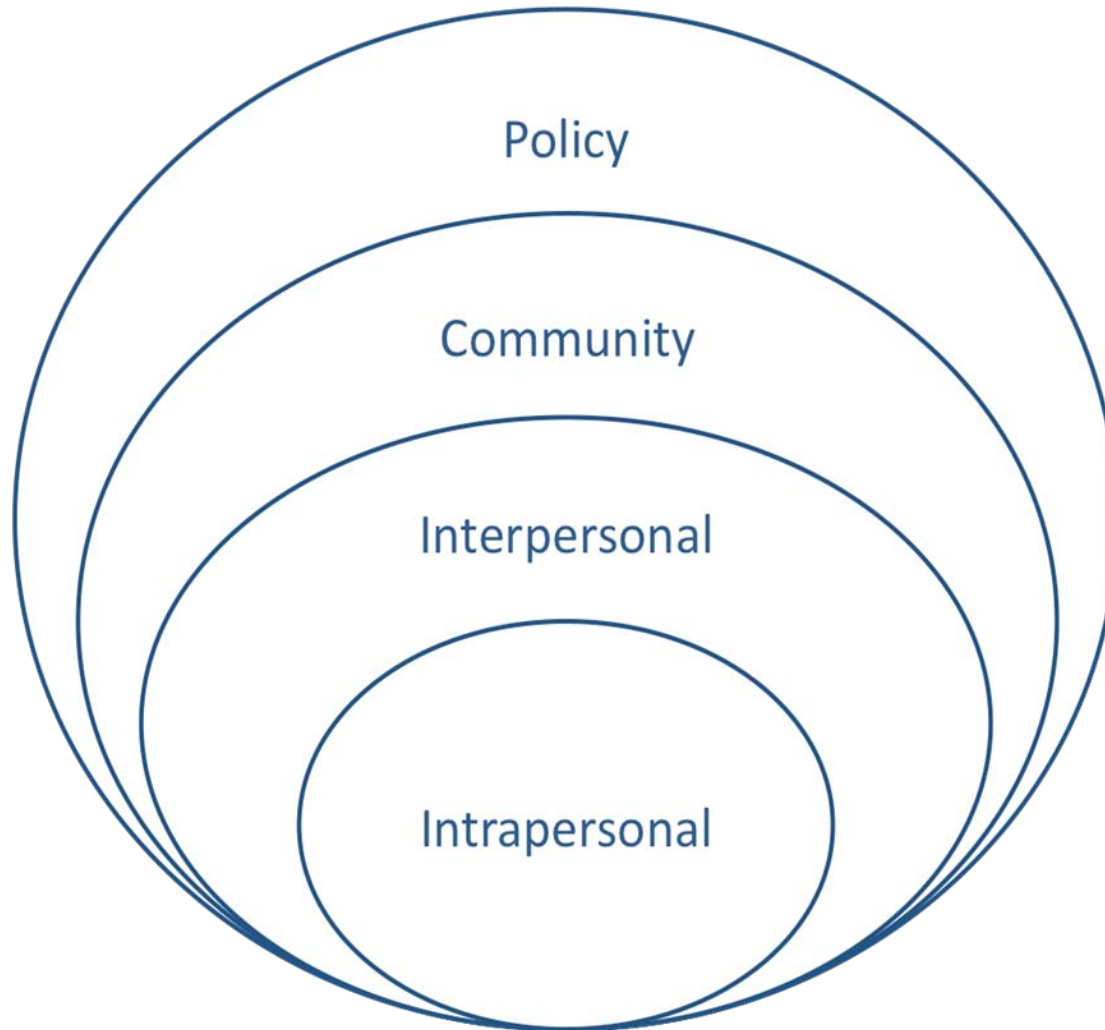


# Comprehensive Evaluation of a Multilevel Physical Activity Intervention in Older Adults

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NHLBI R01HL98425

# Ecological intervention



# Process evaluation



- Helps you plan for dissemination
- Process evaluations can inform you about
  - Fidelity of intervention delivered
  - What processes are important requisites for behavior change?
  - Are there intervention components that are more effective?
  - For whom does the intervention work and why?
- Evaluation is more challenging for interventions that change individuals and the community
- Excellent examples of process evaluation for community projects in the ALbD supplement in AJPM (Nov 2012)
  - And KEYNOTE by Laura Brennan

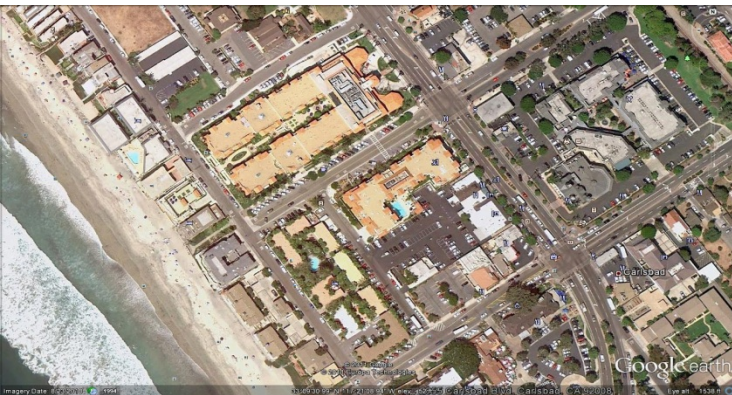


# Three retirement communities



## APARS

**5 indoor PA facilities**  
**2 outdoor PA facilities**  
**408ft walking path**

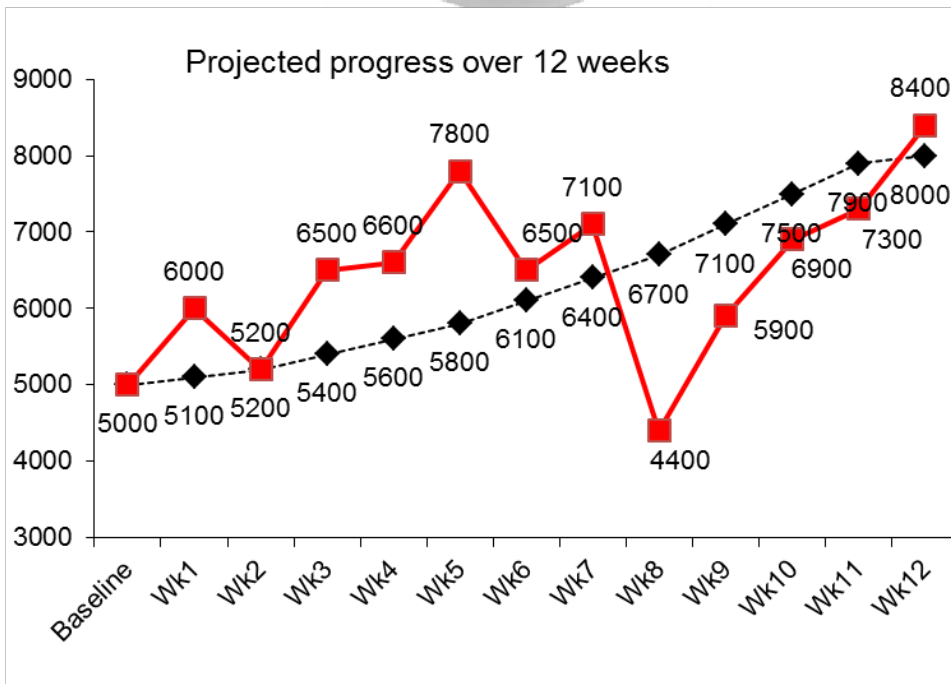


**5 indoor PA facilities**  
**1 outdoor PA facility**  
**237ft walking path**



**5 indoor PA facilities**  
**10 outdoor PA facilities**  
**10,560ft walking path**

# Individual level: pedometers



3000 step count increase

- Steps logged
- % meeting goal

# Environment Campus

# % meeting 3000 step increase

10 fac  
10,000ft

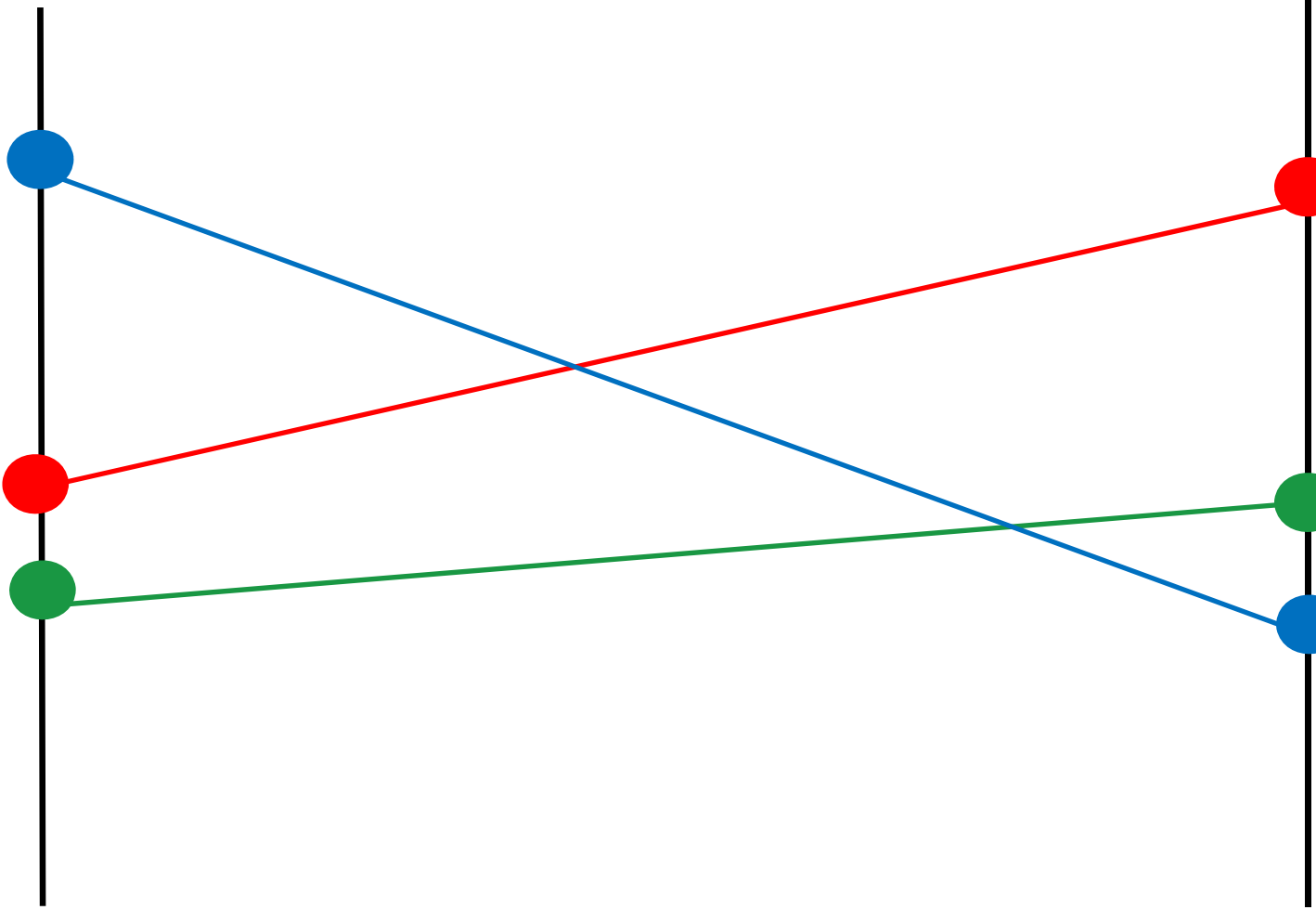
2 fac  
400ft

1 fac  
200ft

71%

50%

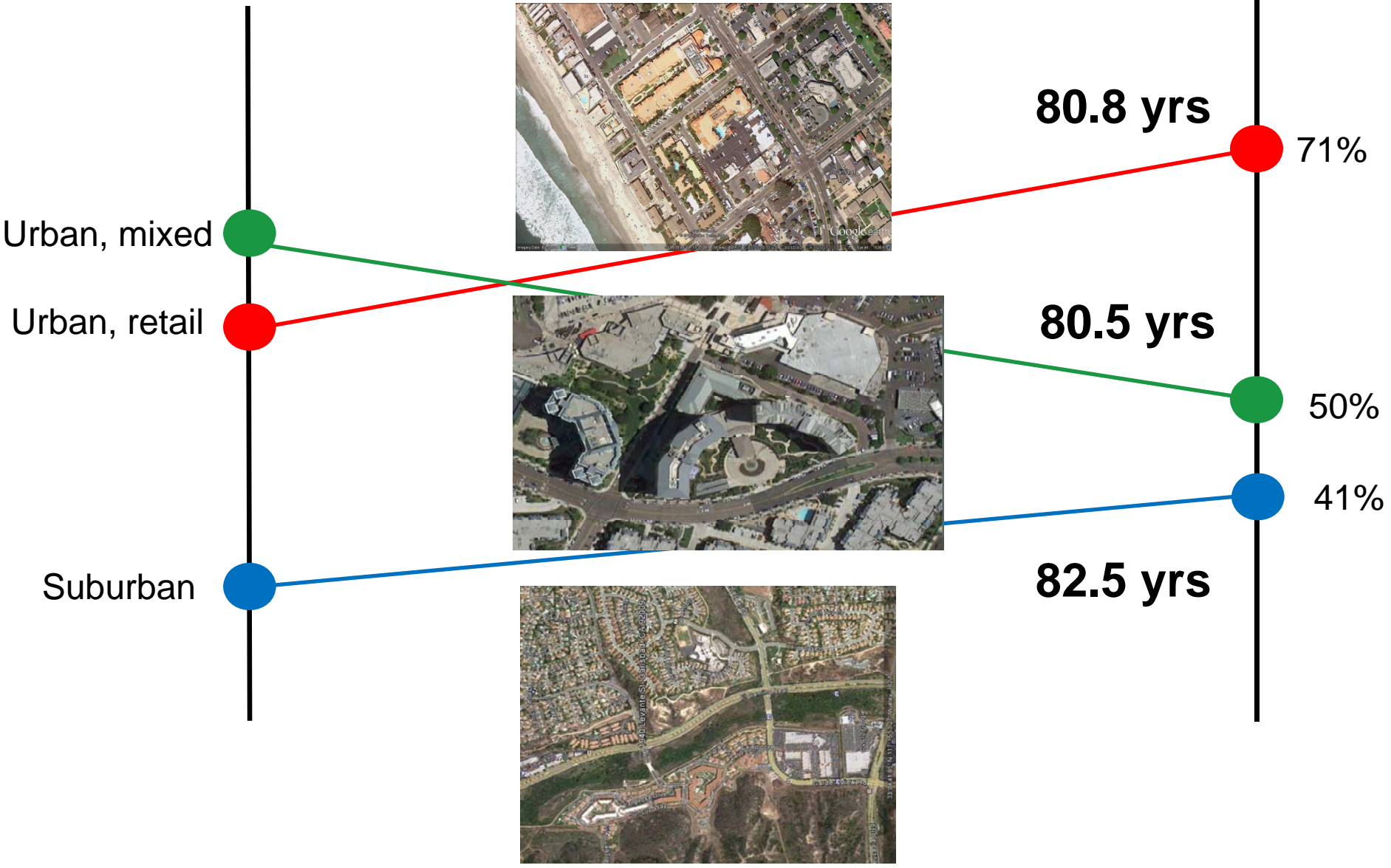
41%





# Environment Neighborhood

% meeting step goal



# Individual level: phone counseling & materials



4 calls to set goals,  
brainstorm barriers,  
increase self efficacy etc.



## Internal QC

- Checklists
- Recordings
- Case management

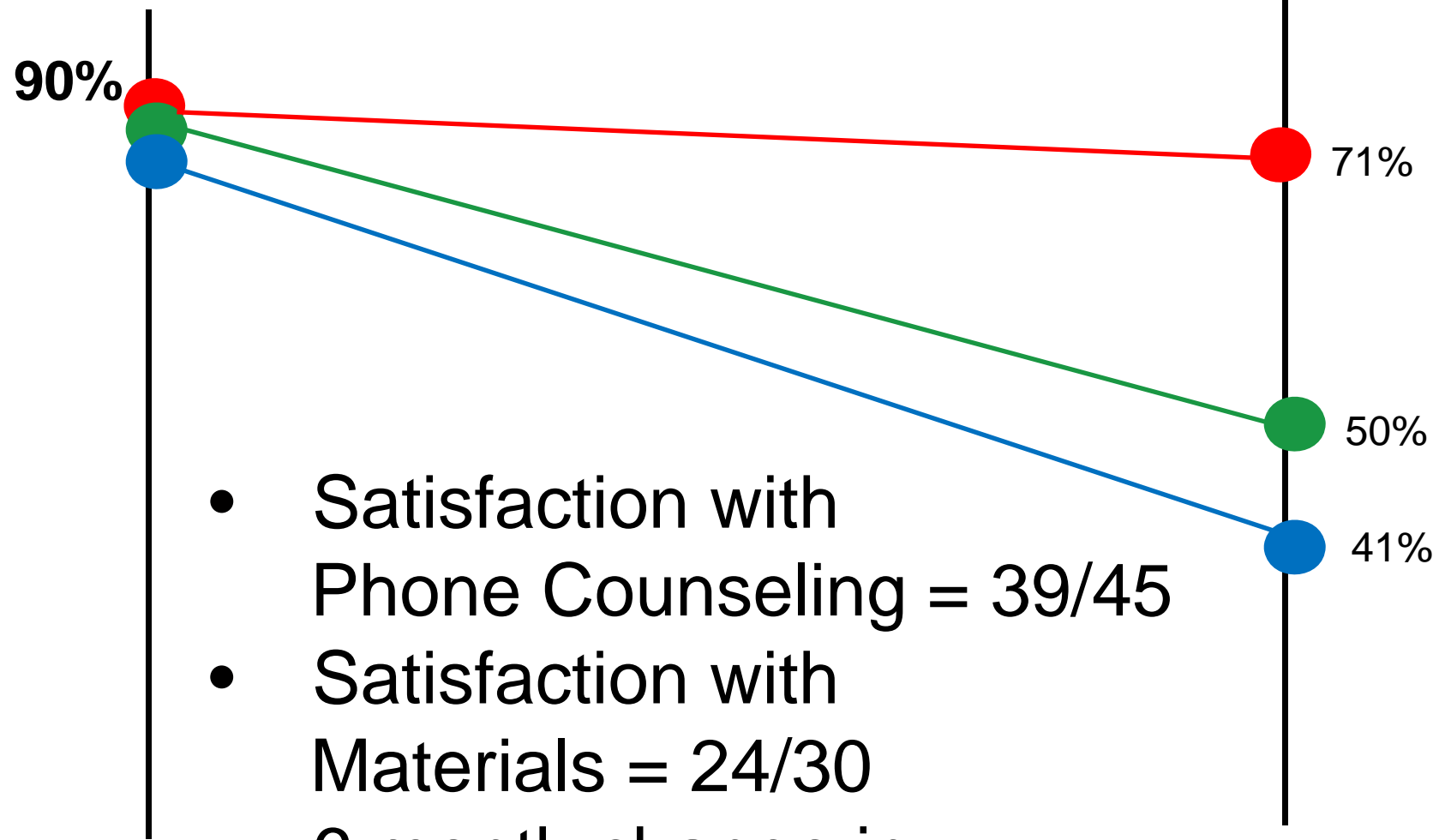
## Process

- % complete calls
- Satisfaction
- Change in confidence
- Testimonials



**% calls complete**

**% meeting step goal**



- Satisfaction with Phone Counseling = 39/45
- Satisfaction with Materials = 24/30
- 6 month change in Confidence = 36.0-36.6/40

# Interpersonal level: group education & peers



Bi weekly education sessions for 6 months: knowledge, social support, skill building



Peer led sessions from months 3-12: social norms, role modeling, social cohesion

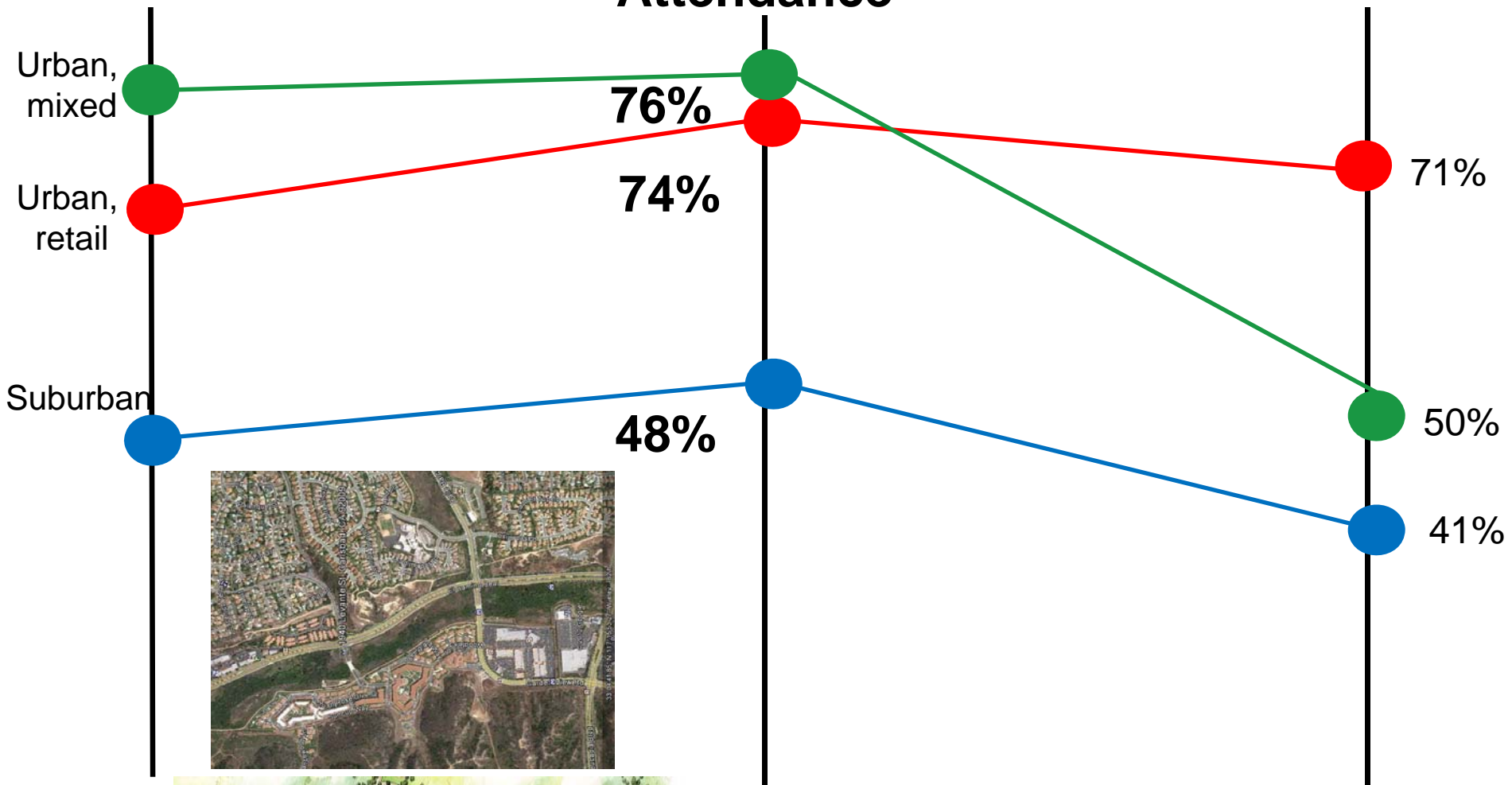
## Internal QC

- Checklists
  - Each session evaluated
- ## Process
- % attendance: **80% (ed)**
  - Satisfaction: **27/30**
  - Group cohesion: **27/35**
  - Change in social support: **19.4-17.7/40**

# Neighborhood

# Peer Event Attendance

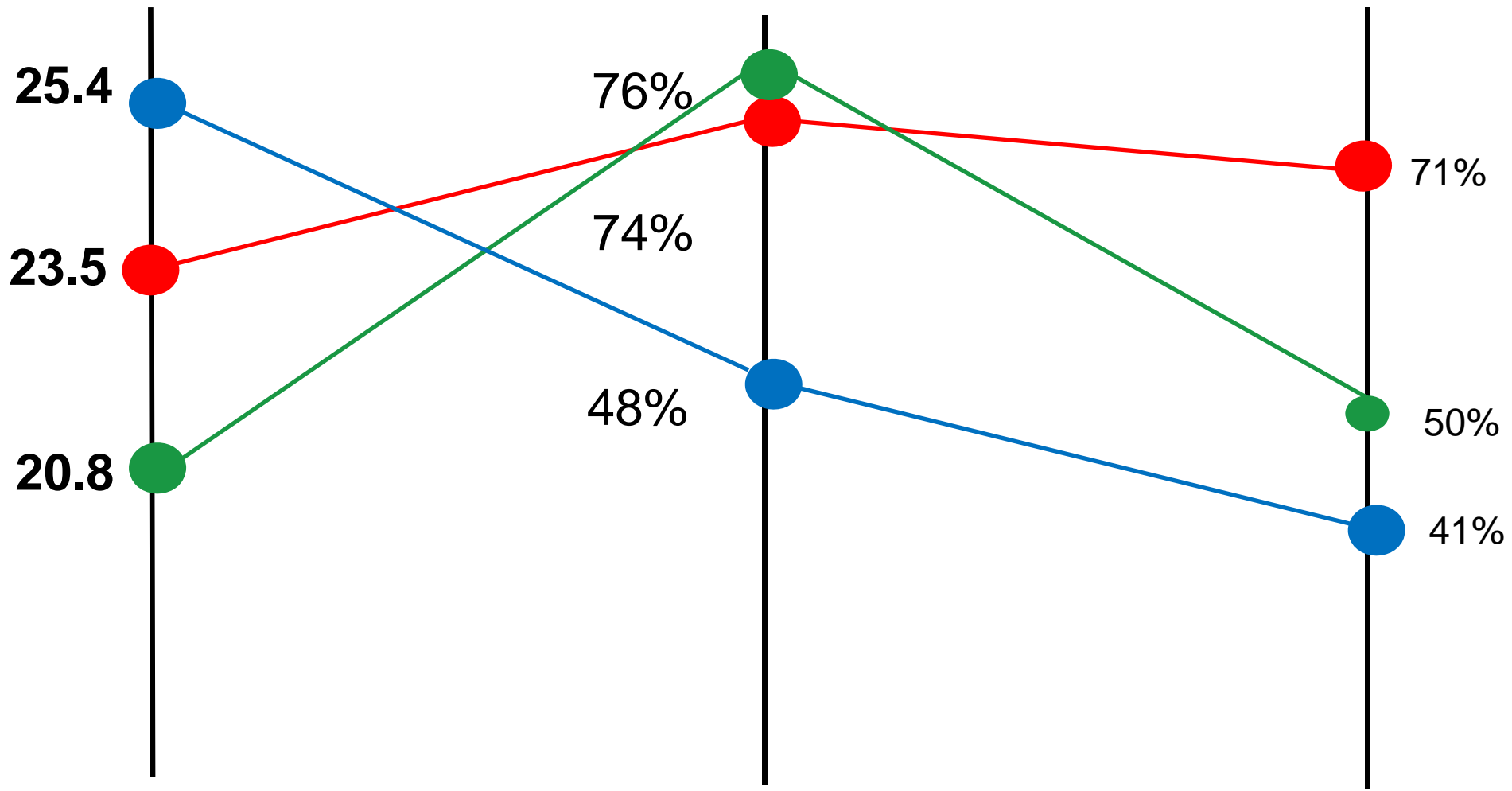
# % meeting step goal



**Satisfaction/30**

Peer Event  
Attendance

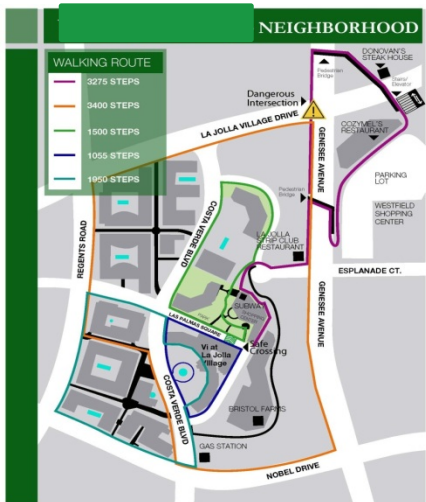
% meeting step goal



The most satisfied did not have the most attendance –  
can we rely on satisfaction measures?



# Community level: maps, awareness & advocacy



<http://www.walksandiego.org/>

## Maps & awareness

- Satisfaction with materials & facilities
- Change in locations walked from survey & GPS

- Walked mapped routes 4 days/wk

## Community advocacy

- Project tracking
  - Issues Identified , Actions taken , Dates , Resolution , Notes (difficulty level, perceived impact etc.) , Supporting Documents (pictures, letters, etc.) , Promotion (announcement at resident council, newsletter, etc.) , Engaged City Officials
- Pre-post pictures see handout

# Before & after pictures

- ❑ Projects included improvements within the retirement community or the surrounding neighborhood
- ❑ Worked with the pedestrian advocacy organization, WalkSanDiego
- ❑ Successes at sites have included
  - Cleaner Pedestrian Bridges
  - Safer Crosswalks
  - Unobstructed Sidewalks

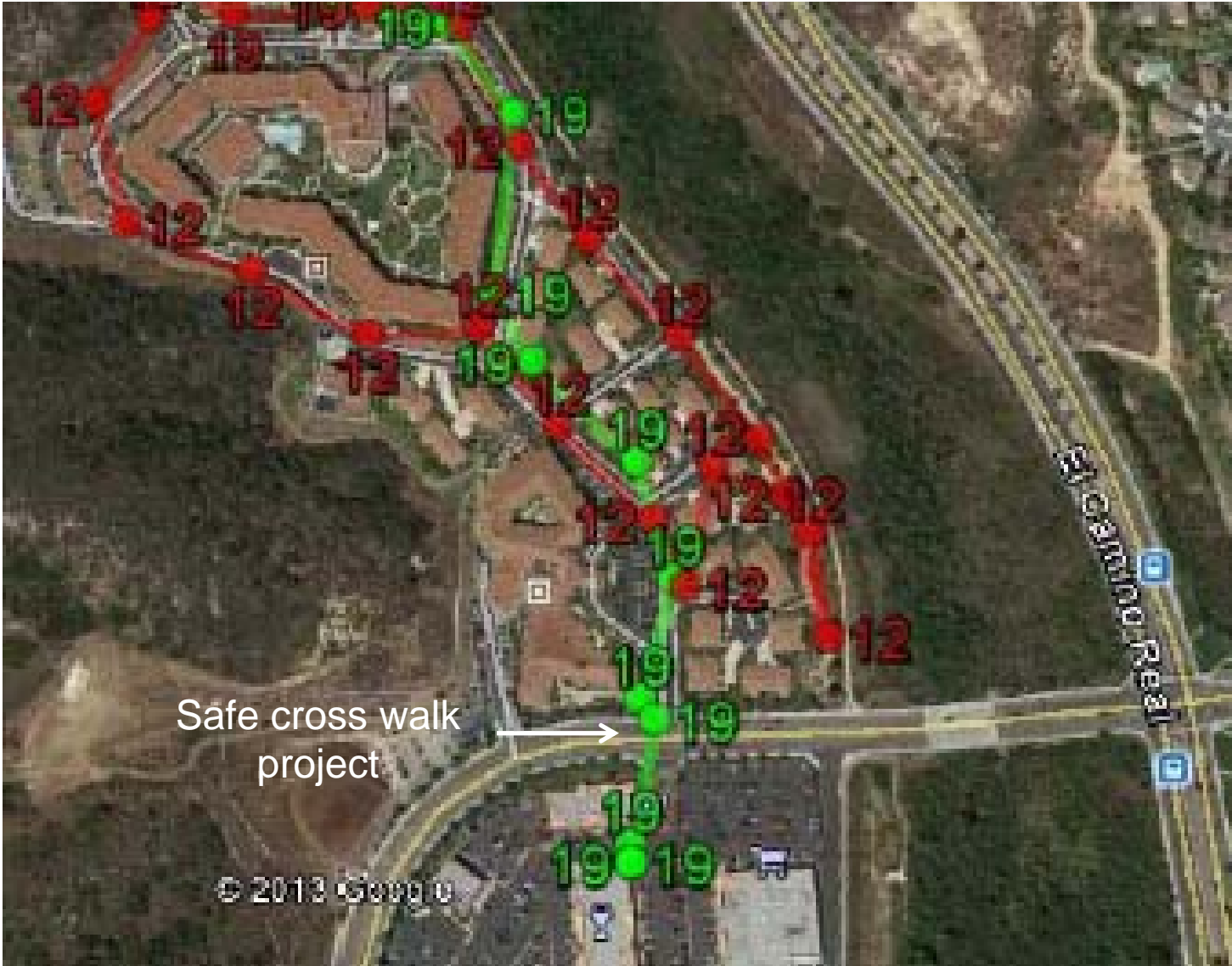




# GPS assessed change in walking due to mapped routes



# GPS change in walking due to increased crossing time



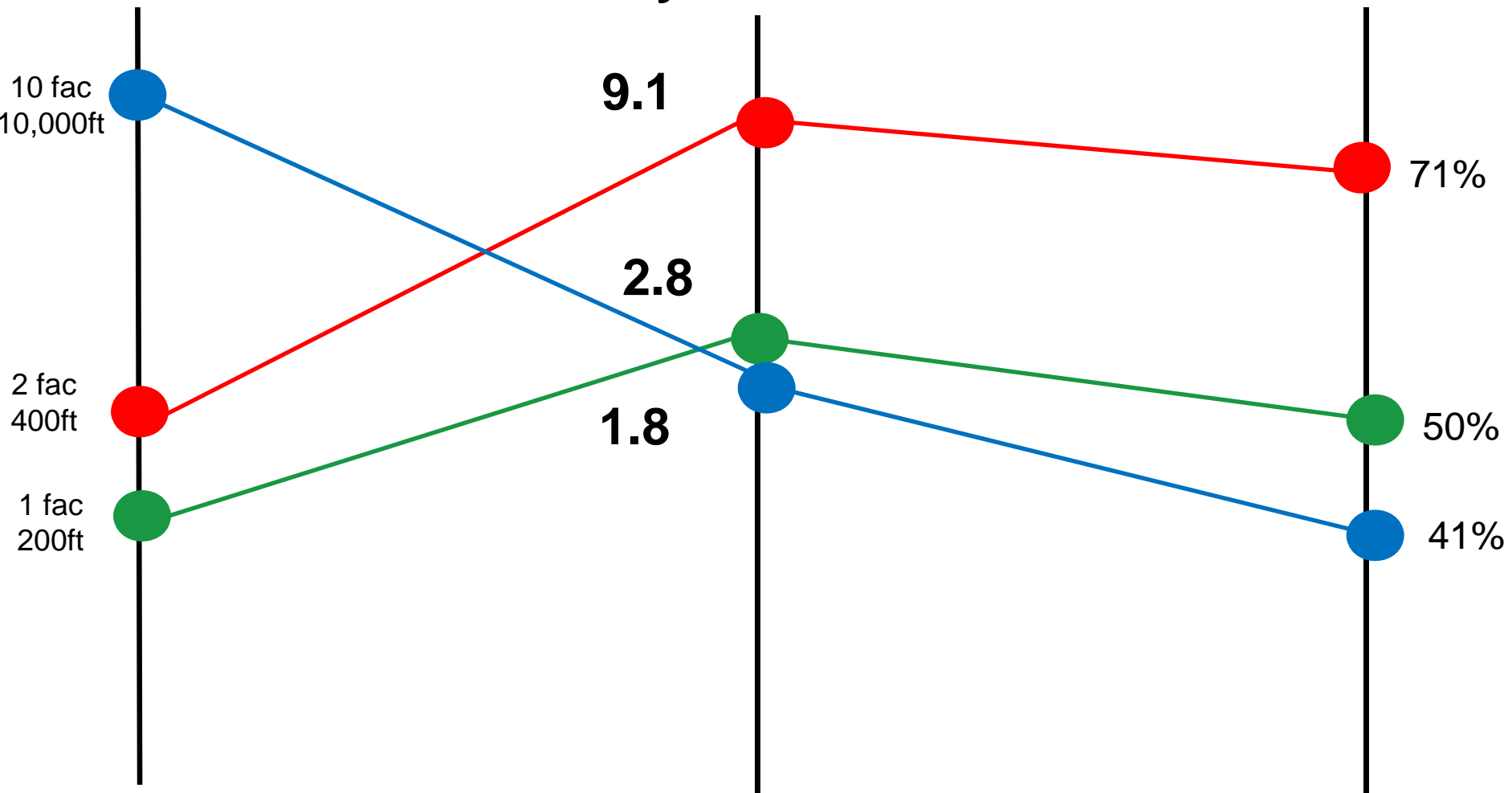


# Change in

## Activity locations/63

## % meeting step goal

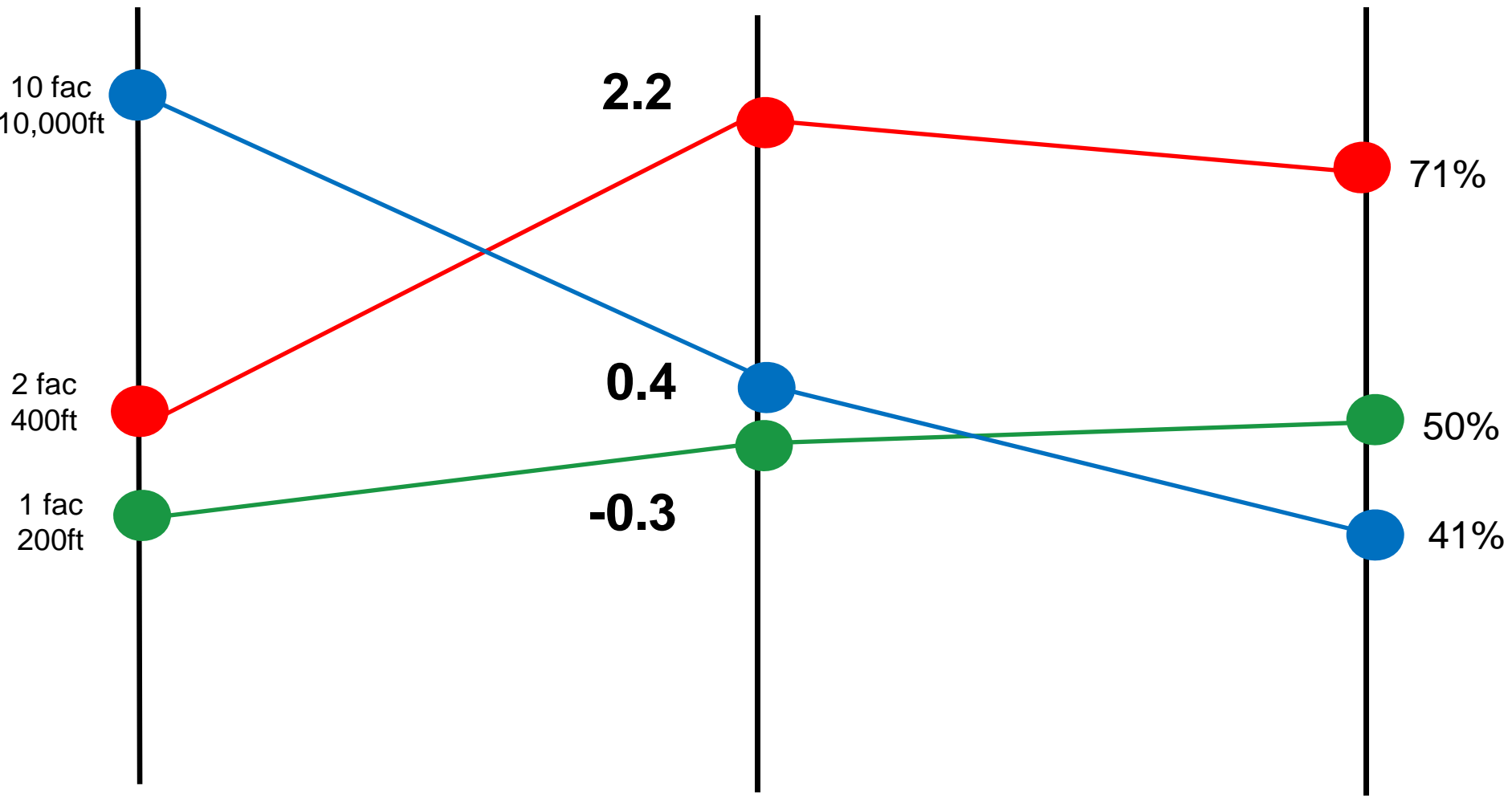
### Campus



# 6 month change in Satisfaction with facilities/50

% meeting step goal

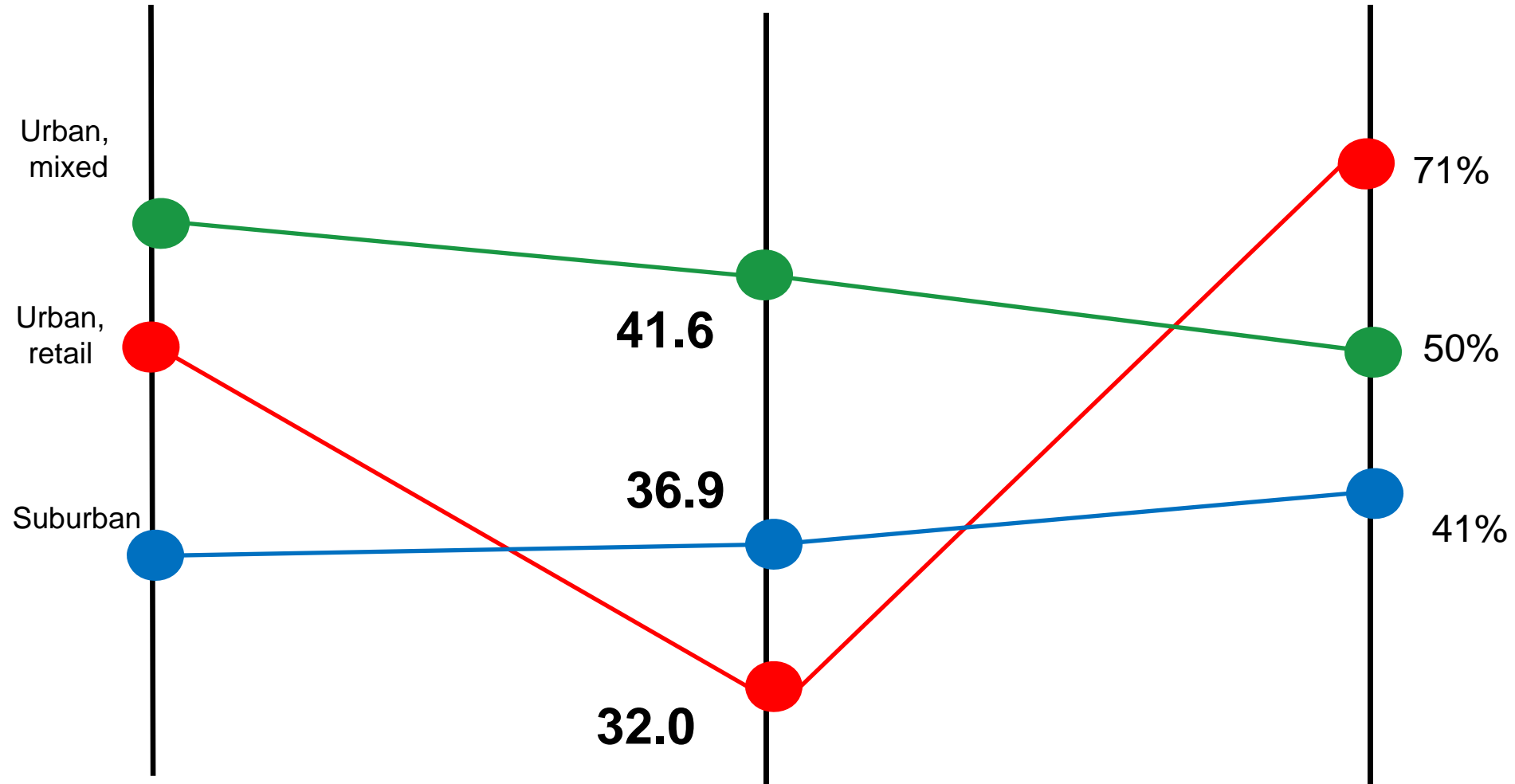
Campus



Neighborhood

**Baseline mins/wk  
Active - ACC**

**% meeting  
step goal**



# What we've learned



- A large suburban campus did not support more people meeting a 3000 step goal
- Was peer event attendance related to step outcome?
- Was a large suburban campus a barrier to social walking?
- What role did social support, confidence, & satisfaction play?
- Larger changes in activity locations were associated with more people meeting step goals
- Did baseline potential for change most impact the uptake of the intervention



# Conclusions



- Process data in an RCT perhaps have less variability than a community implementation
  - Intervention fidelity high
  - Individuals recruited similar: social & confident
  - Satisfaction high
- Should you rely on satisfaction or attendance?
- With more variability can use approaches like configurational frequency analyses
- Individual & interpersonal level process measures more developed than environment level
  - changes in activity locations can be measured and might be important
- Multilevel interventions should be taken as a whole package
- Important to consider context in intervention success



- Any questions?
- [Jkerr@ucsd.edu](mailto:Jkerr@ucsd.edu)
- MIPARC methods described in Contemporary Clinical Trials

- Evaluation may make you Smarter
- It may not make you any Happier



- Example surveys follow

# Satisfaction with Phone Counseling

Please indicate how much you **disagree or agree** with the following statements about the phone counseling you received

	Strongly disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Strongly agree
a. I understood the information given on the phone calls	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
b. I am happy with the length of the phone calls	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
c. I enjoyed the phone calls	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
d. I am happy with how often the phone calls occurred	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
e. The phone counselor was organized	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
f. The step goals were challenging	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
g. I felt the phone counselor listened to me	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
h. The phone calls helped me plan more walking into my day	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
i. The phone counselor was able to answer my questions	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

# Self-Efficacy survey questions

1. How <b><u>confident</u></b> are you that you can ...	Not at all confident		Somewhat confident		Absolutely confident
a. walk for 5 minutes without stopping	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
b. walk for 15 minutes without stopping	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
c. walk for 20 minutes without stopping	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
d. use the inside hallways on your campus to increase your walking	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
e. use the stairs instead of the elevator	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
f. participate in an exercise class	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
g. go on off-campus bus trips that involve walking (e.g., shopping, museums, etc.)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
h. use outdoor walking paths on your campus to increase your walking	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
i. use the exercise room or equipment	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
j. walk in the surrounding neighborhood	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>



# Materials satisfaction survey questions

	Strongly disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Strongly agree
a. The information in my binder helps me walk more	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
b. The prizes given out during sessions and events motivate me	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
c. The celebration board motivates me	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
d. The step log helps keep me on track	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
e. The progress charts motivate me to reach my goal	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
f. The pedometer helps me walk more	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

# • Activity location survey

In a <b>typical week</b> how many days do you...	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
Walk <b><u>indoors for more than 10 minutes</u></b> on your campus (e.g., in hallways, rooms, stairways)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use the <b><u>indoor</u></b> exercise room or exercise equipment on your campus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take part in an exercise class on your campus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attend active programs on your campus (e.g., Wii games, dances, walking group, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk <b><u>outdoors for more than 10 minutes</u></b> on your campus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use the outdoor exercise/activity courts on your campus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk off-campus (i.e., into the neighborhood outside of the boundary to your campus)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attend exercise classes <b><u>off-campus</u></b> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attend off-campus outings (e.g., trips, drives) that allow you to walk?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# • Satisfaction with facilities survey

. How <b>satisfied</b> are you with...	Strongly dissatisfied	Somewhat dissatisfied	Neither satisfied or dissatisfied	Somewhat satisfied	Strongly satisfied
. the indoor hallways as places to walk on your campus?	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
. the accessibility of staircases on your campus?	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
. the exercise room/equipment on your campus?	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
. the exercise classes offered on your campus?	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
. the active programs (e.g., dances, walking groups, etc.) offered on your campus?	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
the outdoor walking paths on your campus?	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
. the outdoor courts and equipment on your campus?	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
. the availability of safe walking routes <b>off-campus?</b>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
the availability of exercise classes for seniors <b>off-campus?</b>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
organized outings (trips, drives) that involve some walking?	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

# Peer event satisfaction

Please indicate how much you disagree or agree with the following statements about the peer events.

<input type="checkbox"/>	Strongly disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Strongly agree
a. I understand the purpose of the peer events	1	2	3	4	5
a. The information presented at the peer events is clear	1	2	3	4	5
a. I am happy with the length of the peer events	1	2	3	4	5
a. I enjoy the peer events	1	2	3	4	5
a. I am happy with how often the peer events occur	1	2	3	4	5
a. The peer events are well organized	1	2	3	4	5