

# Simulated Effects of School Policy Changes in After-School Sports on Sport Participation Rates among North Carolina Middle School Students

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# Study Background

- Youth sport programs can provide essential physical activity
  - WHO (2003)
- **Importance of school settings** to provide sport programs
  - Especially for rural and socio-economically disadvantaged youth
    - Edwards (2009)
- Current school policies may limit participation in school-sponsored co-curricular sports
  - Casper et al. (In press)



# Study Background



- Two specific policies in North Carolina
  - 6<sup>th</sup> Graders not allowed to participate in competitive interscholastic sports
  - Prioritization of interscholastic sports over intramural sports and non-competitive activities
    - Increased efficacy of intramurals and non-competitive activities to increase participation and rates of physical activity



# Study Objectives

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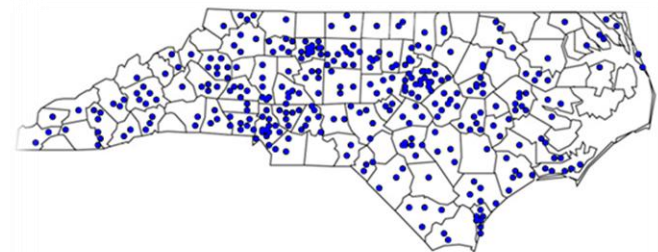
- The purpose of this study was to examine the potential impact of policies changes that would increase both the **reach** and **efficacy** of middle school resources for co-curricular physical activity
  - Allow 6<sup>th</sup> grade participation in interscholastic sports
  - Provide intramural sports and non-competitive activities



# Methods



- Simulation Analysis
- Data Sources
  - Individual-level data
    - 4 North Carolina Middle Schools (2009)(n = 2,582)
    - NELS:88 (1988) (n = 27,394)
  - Activity-level data
    - SOPLAY (2009) (1,188 observations)
  - School-level data
    - 325 NC Middle Schools (2009)
      - SHPPS-based instrument

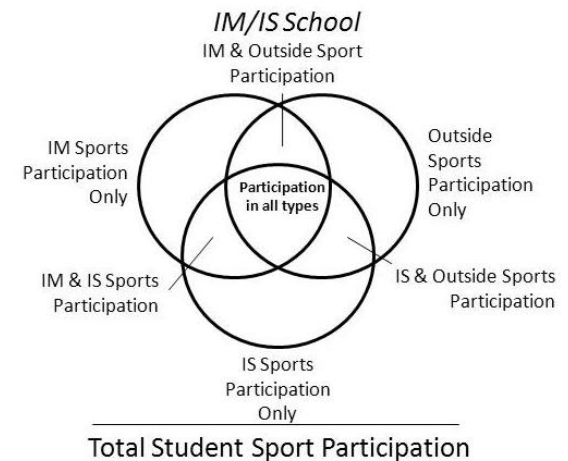
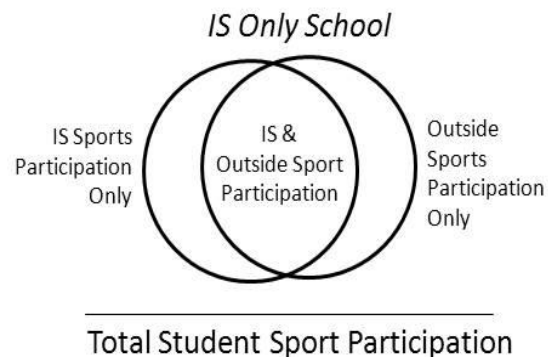
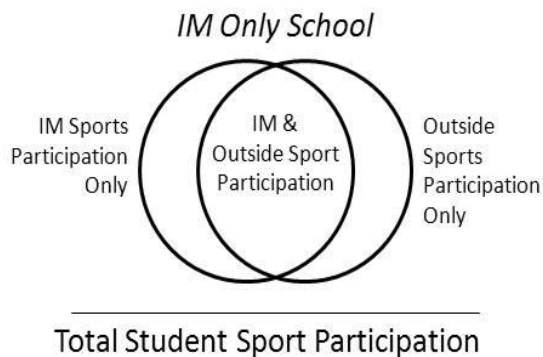


# Methods



- **Assumptions**

- Sampled participation patterns were representative
- Activity levels were constant across activity type
- Equilibrium of supply and demand
- Fixed roster limits for competitive sports
  - Grade-level differences on “making the cut”
- Types of sport participation



# Methods



- **Initial calculations**

- **Stratified approach**

- Grade-level, Race/Ethnicity, Economically disadvantaged status, and sport program type
- OLS regression models predicting participation rates

- **Participation style**

- Estimated participation by activity and delivery system

Type of sport participation	Pct. Of Participants in IS Only School	Pct. Of Participants in IM Only School	Pct. Of Participants in IM/IS School	Avg. No. of Activities/Year
Community Only	48.6	50.4	28.5	3
Intramural (IM) Only	--	22.5	8.9	2.4
Interscholastic (IS) Only	19.8	--	13.0	1.3
IM & IS	--	--	14.7	2.4
IM & Community	--	27.1	5.6	5
IS & Community	31.6	--	9.3	3.8
IM, IS, & Community	--	--	20.0	5

# Baseline Estimates



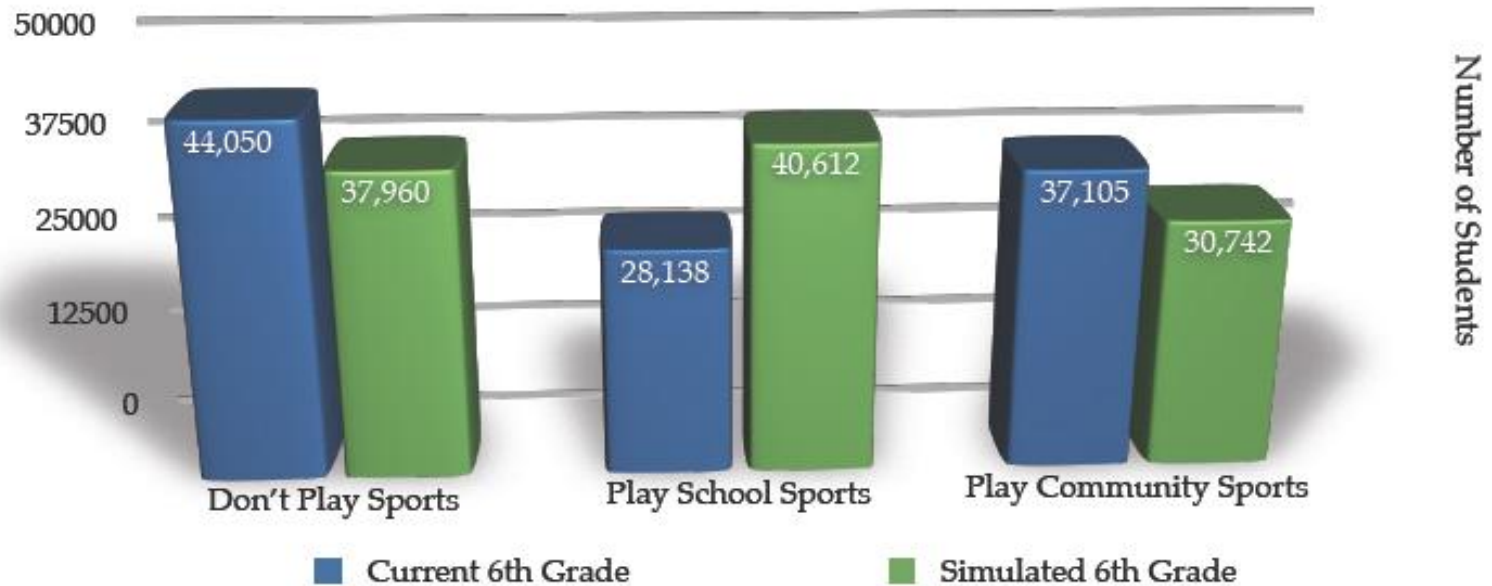
- State-level estimates of current sport participation and physical activity levels
  - **62.3%** of all middle school students
    - 6<sup>th</sup> Graders: **59.4%**
    - 7<sup>th</sup>/8<sup>th</sup> Graders: **63.4%**
  - Suggests **124,502 not participating statewide**
  - Disparities based on economic status

	Total Students	Participation Rate	Avg. METs during afterschool (All students)
Economically disadvantaged	146,053	52.3%	2.39
Non-economically disadvantaged	184,009	70.2%	2.70



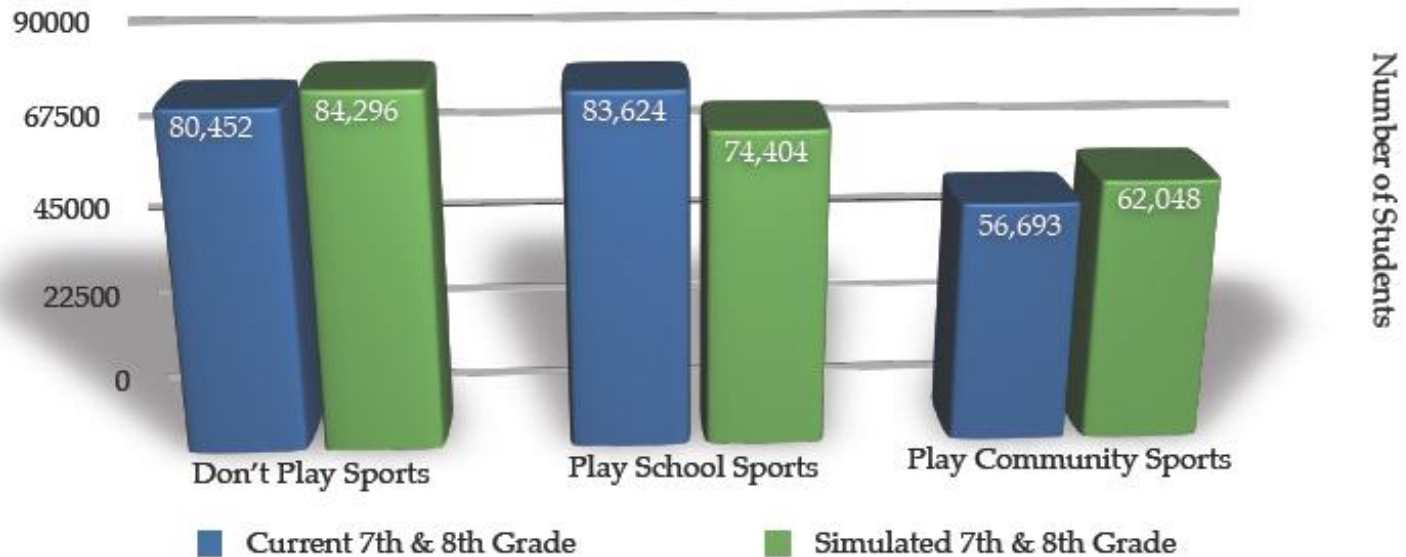
# Simulation of Policy I

- Simulation of 6<sup>th</sup> Grade Students Allowed to Play School Sports



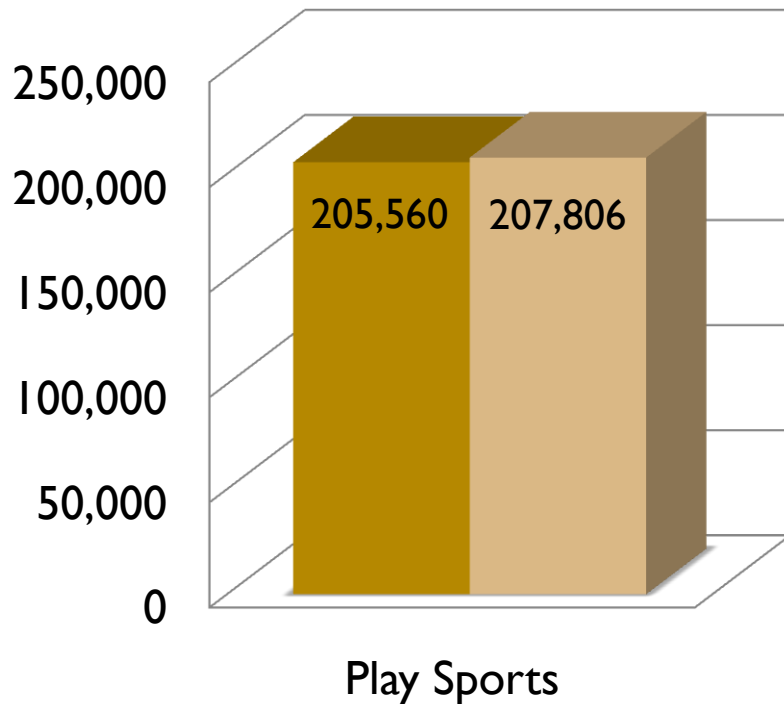
# Simulation of Policy I

- Simulation of 6<sup>th</sup> Grade Students Allowed to Play School Sports

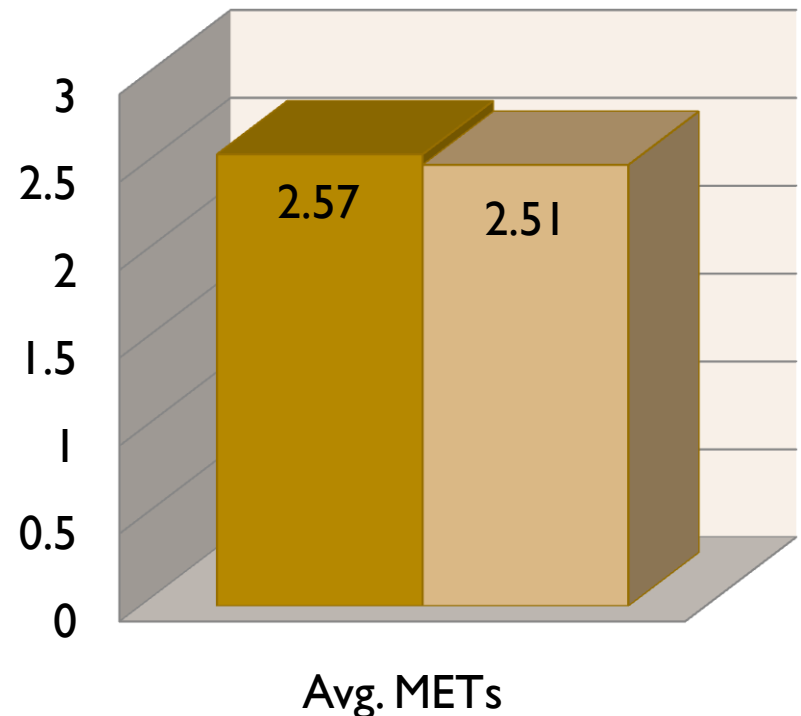


# Simulation of Policy I

- Simulation of 6<sup>th</sup> Grade Students Allowed to Play School Sports



■ Current ■ Simulation

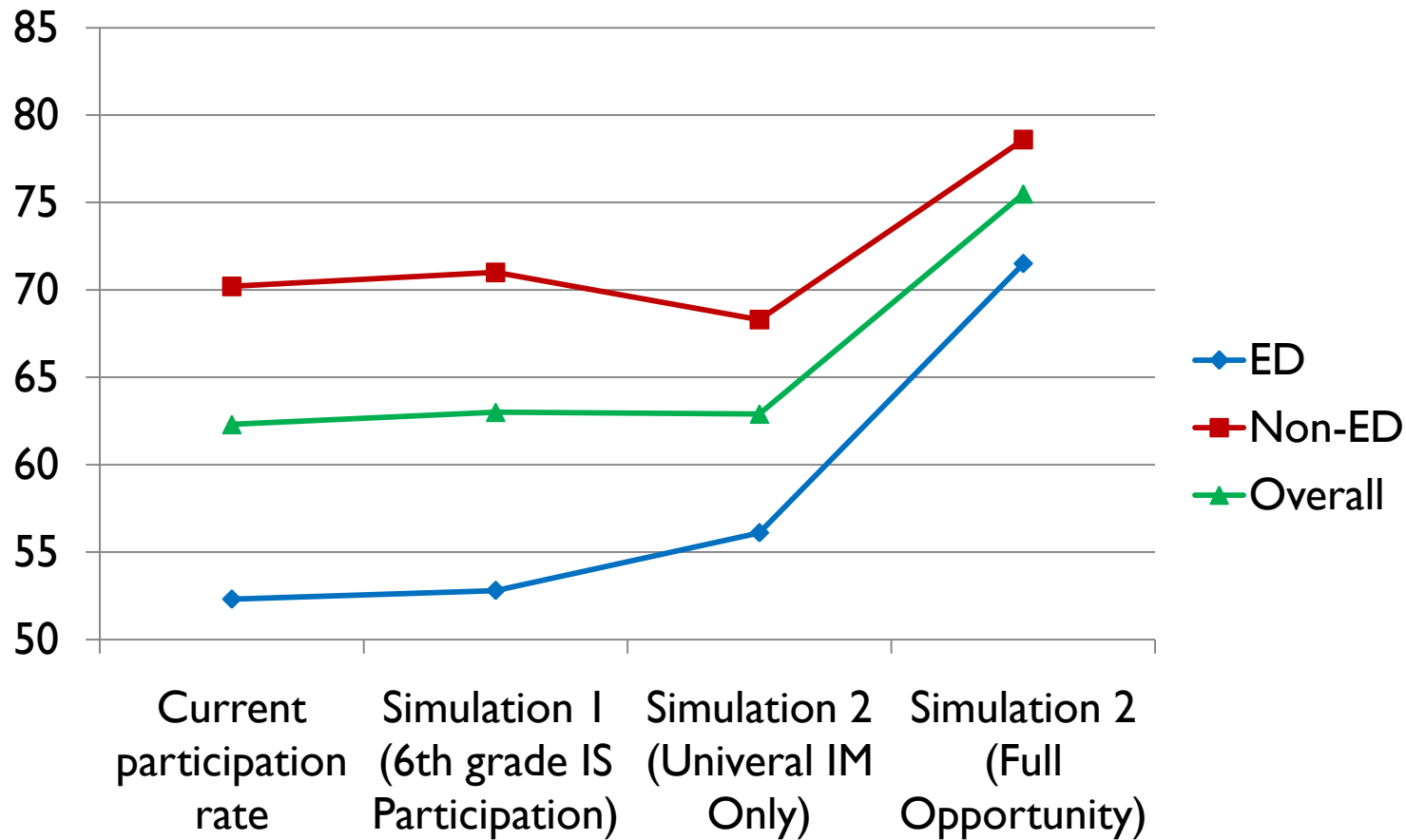


■ Current ■ Simulation

# Policy Comparisons



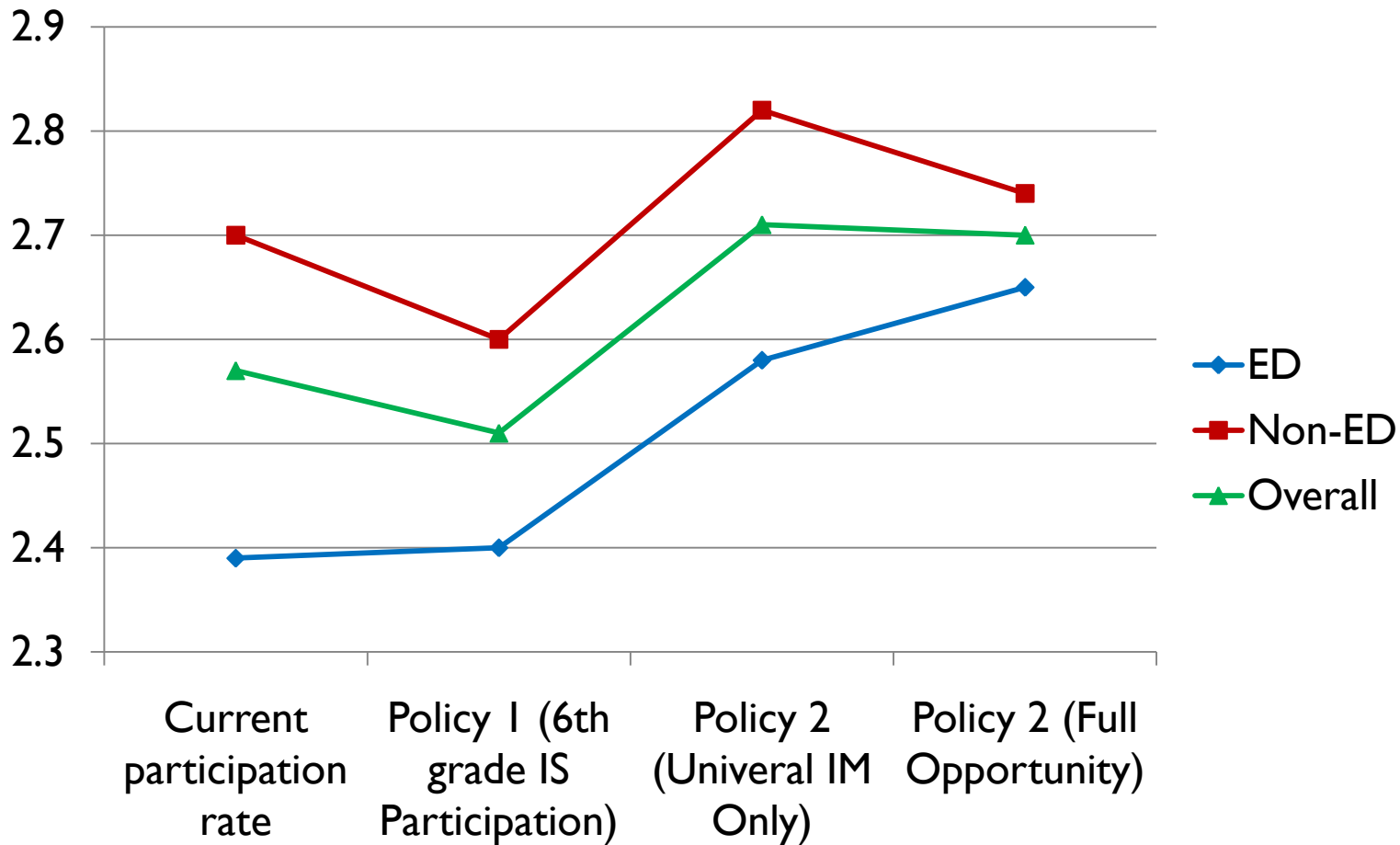
## Reach - Participation Rates



# Policy Comparisons



## Efficacy - Average METs



# Key Findings

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- 39% of NC middle school students, and nearly half economically disadvantaged students, may not be participating in sport
- On its own, the removal of restriction on 6<sup>th</sup> grade participation in interscholastic sport would not increase sport participation among all middle school students
- The adoption of policies to provide intramural sports may have the greatest potential to increase sport participation rates and average METs among middle school students, particularly economically disadvantaged

# Questions & Comments



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# Simulation of Policy 2

- Universal adoption of intramural only school sports
  - Overall 1.05% increase in sport participation and average METs increase of 5.4%

Economically Disadvantaged	Participation Rate	Participants	Average METs
Current	52.3%	76,386	2.39
Simulation	56.1%	82,009	2.58
Difference	+ 7.4%	+ 5,623	+ 7.9%

Non- Economically Disadvantaged	Participation Rate	Participants	Average METs
Current	70.2%	129,174	2.70
Simulation	68.3%	125,702	2.82
Difference	- 2.7%	- 3,472	+ 5.4%



# Simulation of Policy 2

- Universal Adoption of “Full Opportunity” Sports
  - Overall 21.2% increase in sport participation and average METs increase of 5.1%

Economically Disadvantaged	Participation Rate	Participants	Average METs
Current	52.3%	76,386	2.39
Simulation	71.5%	104,455	2.65
Difference	+ 36.8%	+ 28,069	+ 10.9%

Non- Economically Disadvantaged	Participation Rate	Participants	Average METs
Current	70.2%	129,174	2.70
Simulation	78.6%	144,609	2.74
Difference	+ 11.8%	+ 15,435	+ 1.5%