

Focusing on the 5th “E”: Evaluating Portland’s Safe Routes to School Program

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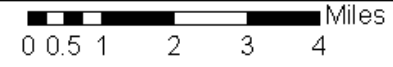
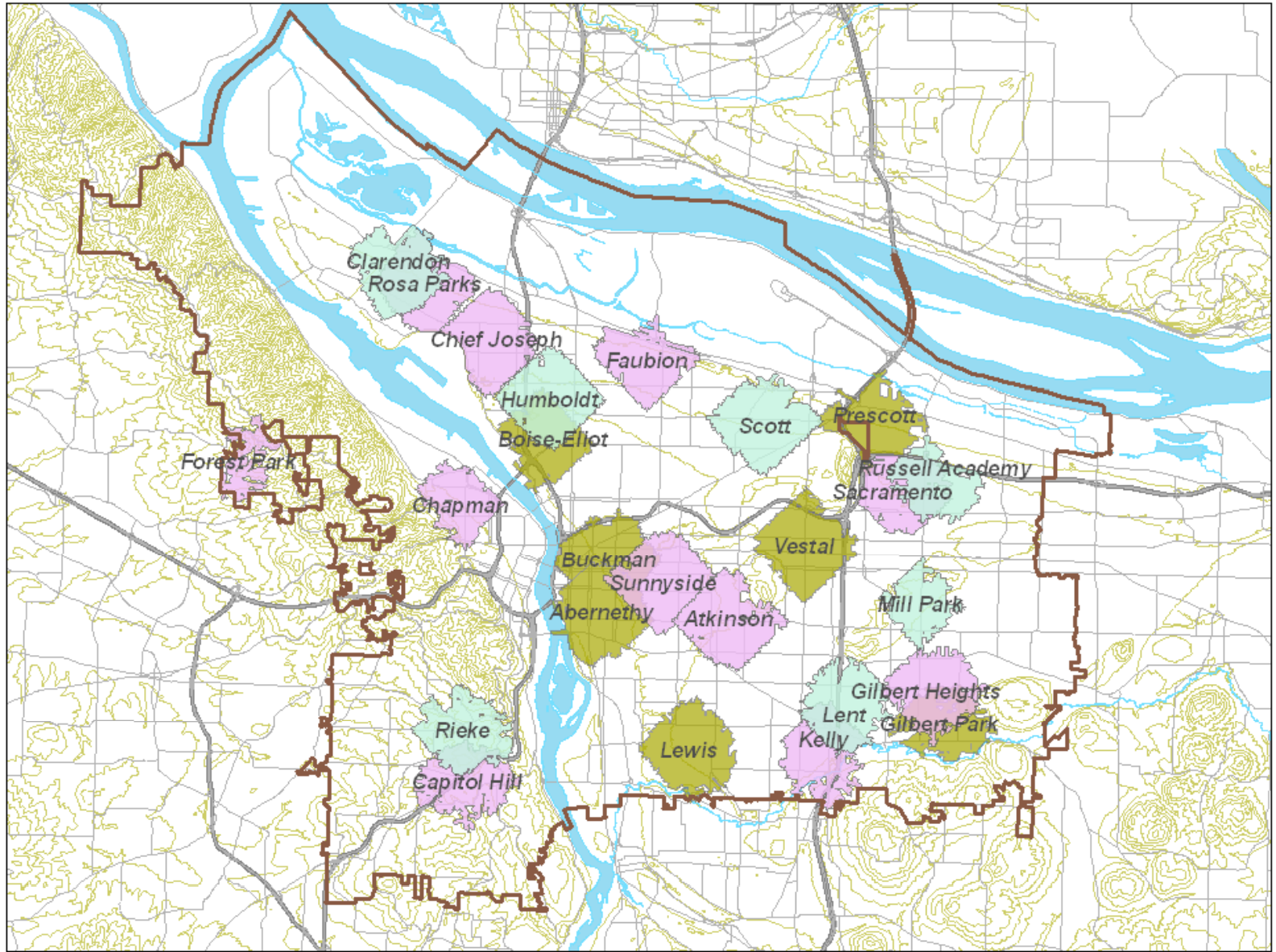
I. Portland's SRTS program and prior evaluation efforts

II. Additional evaluation data and methods

III. Results



2005/06 Cohort + 2006/07 Cohort + 2007/08 Cohort



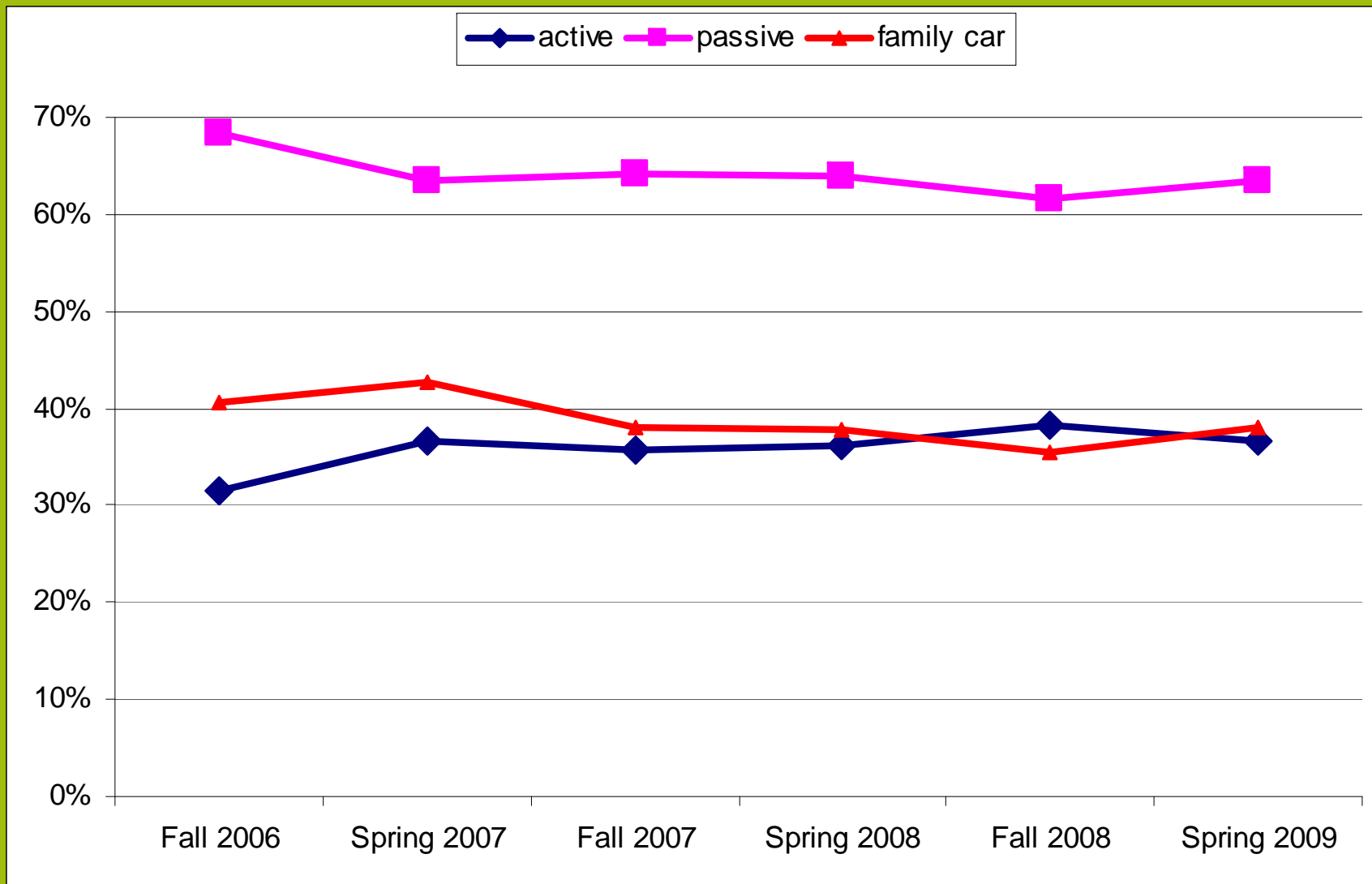
2005-2008 Evaluation Tools

- Handraising Tally
 - Mode choice, grade, and weather
- Mail-in Parent Survey
 - Primary travel mode
 - Some biographical Information, including:
 - Students' sex, grade, number of siblings
 - Parents' level of education
 - Perceived travel time and distance
 - Concerns/barriers affecting mode choice
 - Parental perceptions about
 - The health and safety of walking and biking
 - school's encouragement of walking and biking
 - SR2S program impact on interest in walking or biking

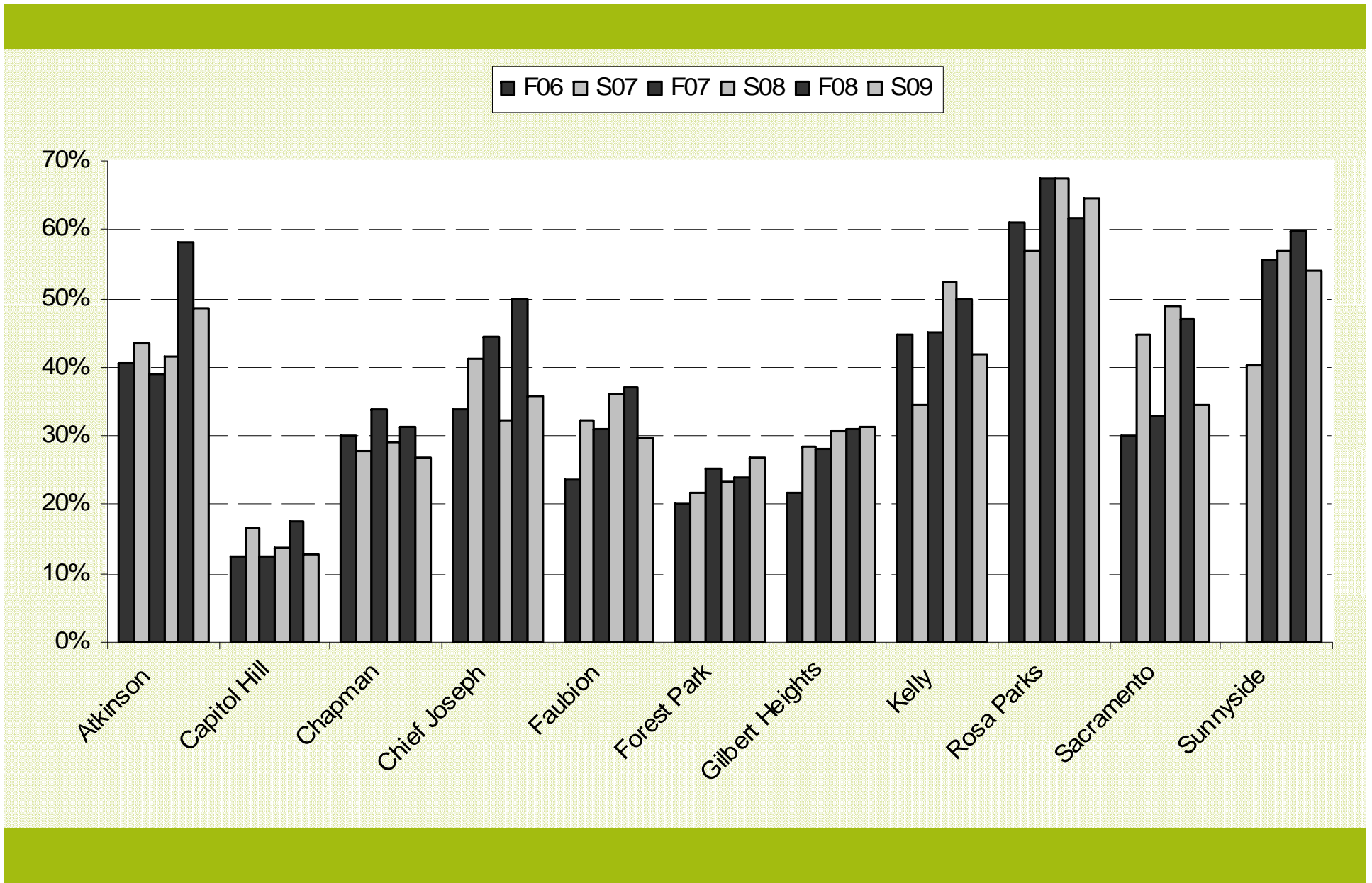
Mode Choice by Year—all schools (parent survey)

Active=Walk+Bike+Other

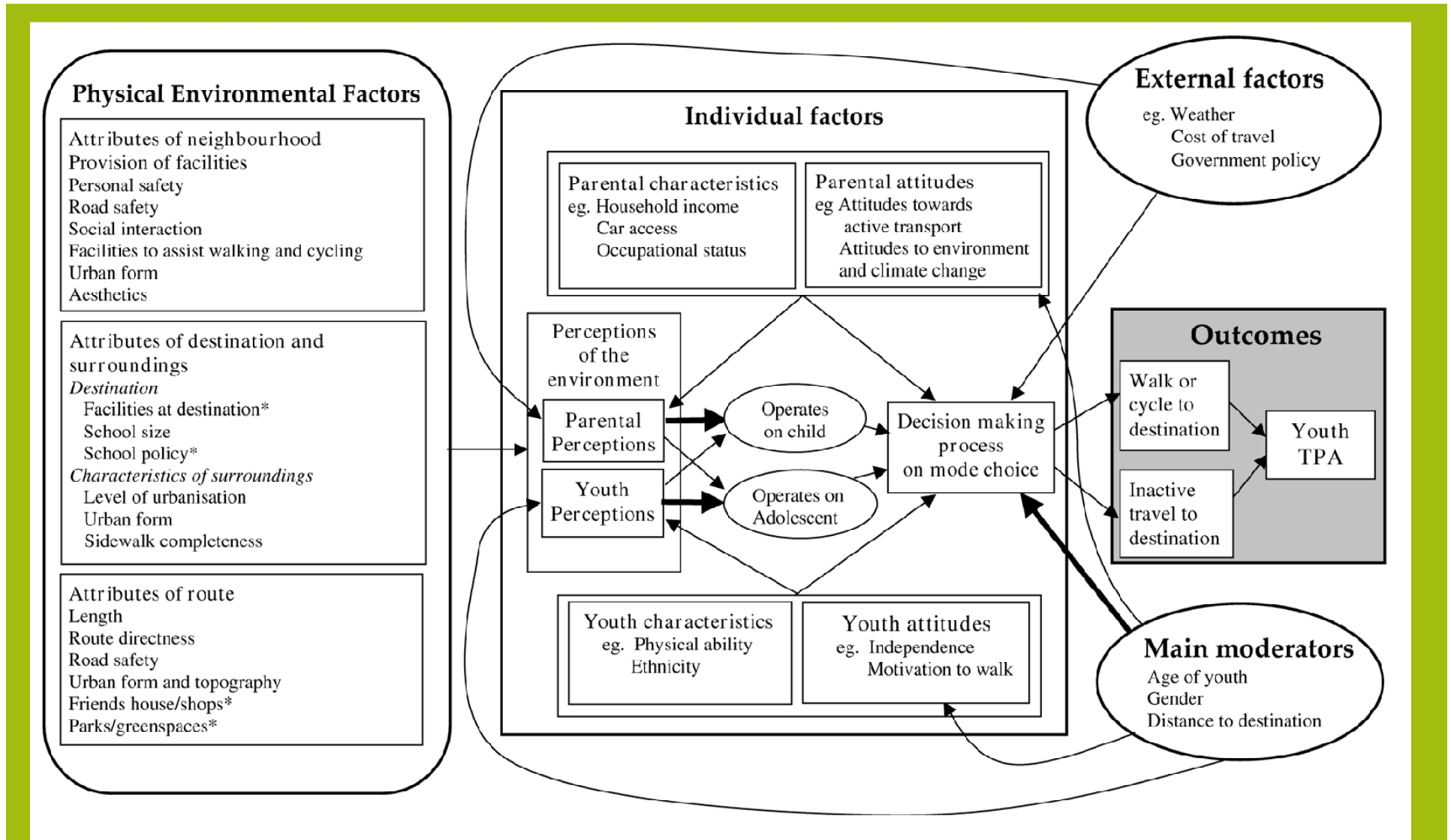
Passive=Bus+Car+Transit



Active Commute Rates, AM or PM—Year 2 Schools (parent survey)



Predicting School Commute Mode Choice



Source: JR Panter, AP Jones, EMF van Sluijs, "Environmental determinants of active travel in youth: A review and framework for future research" *International Journal of Behavioral Nutrition and Physical Activity*, 2008, 5:34

Additional Evaluation Data

- School-specific program metrics
- Urban Form data
- Socio-demographic data

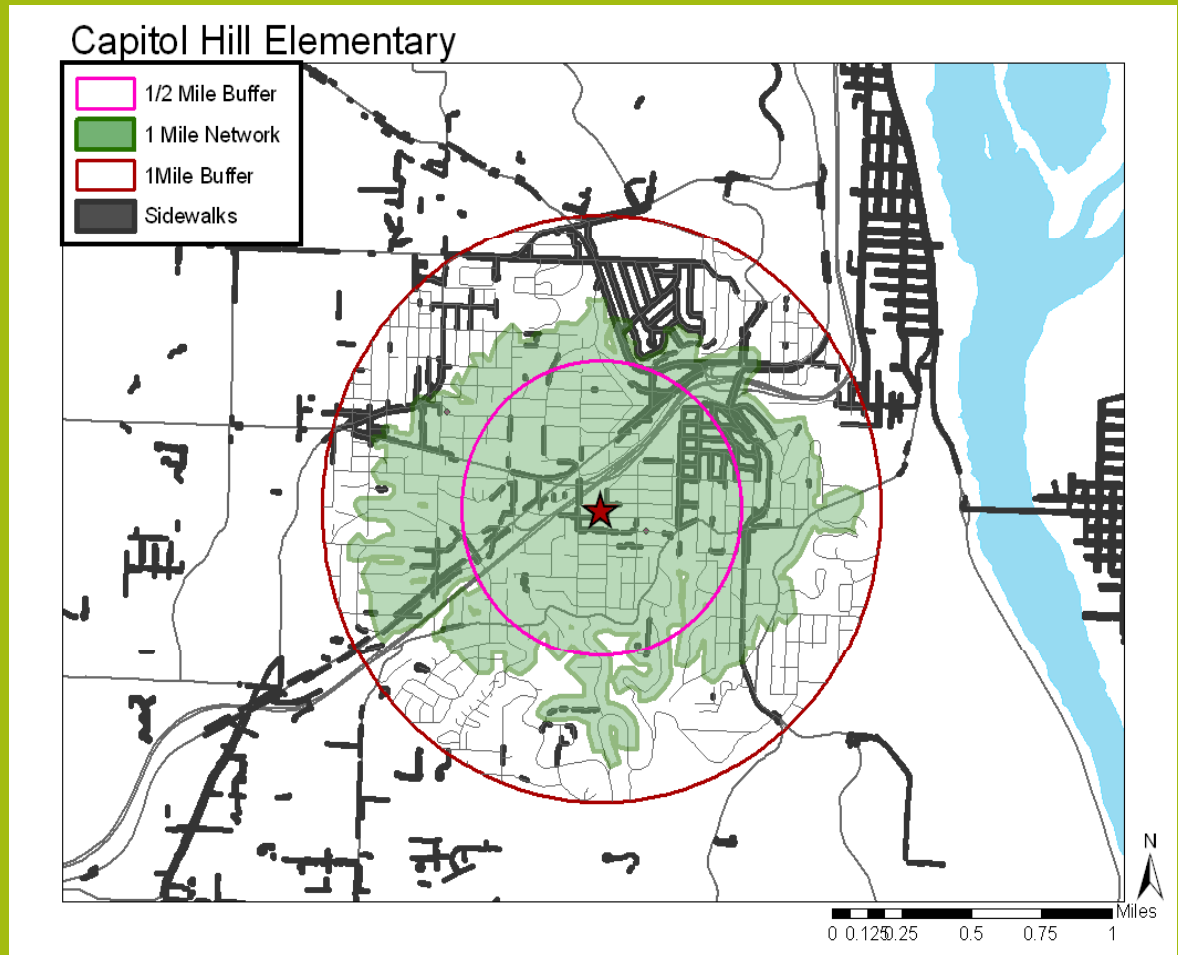


Individual School Program Metrics (spring 2009)

	Dedicated Parent Volunteer	Dedicated Staff Volunteer	Walk+Bike Participation	Other Encouragement Activities Participation	Engineering Projects Completed
Abernethy	2	1	1	1	2
Atkinson	2	1	1	1	1
Boise-Eliot	0	0	1	1	1
Buckman	1	1	1	1	1
Capitol Hill	1	0	1	0	1

Urban Form Data

- Street Connectivity
- Sidewalk coverage
- Slope
- Hazardous Bussing Conditions



Socio-Demographic Data

- Income
- Crime
- Vehicle ownership
- Race/Ethnicity
- Variety of household characteristics
 - Employment, presence of other family members, etc.



Methods

- Covariate analysis
- Binomial logistic regression analysis
 - Active vs passive mode as the student's primary school commute mode.
 - Two models
 - All respondents
 - <1 mile respondents



Active-Passive Commute Binomial Logit Model, Spring 2009, All Survey Respondents

Independent Variables	B	Sig.	Exp(B)
Urban Form:			
Distance (less than 1 mile from school)	2.515	0	12.371
Street connectivity (CNR)	0.352	0	1.421
Slope	0.619	0	1.857
Parent Perceptions:			
Weather is a barrier	-0.434	0.005	0.648
Condition/Lack of sidewalks is a barrier	0.464	0.004	1.59
Traffic Speed is a barrier	-0.308	0.038	0.735
School encourages active modes	0.556	0	1.744
Parent/Household Characteristics:			
Household income (free and reduced lunch rates)	2.189	0	8.923
Number of additional siblings in K-5	0.236	0.021	1.266
Student Characteristics:			
Grade	0.082	0.033	1.086
Permission/ability to walk/bike alone by 5th grade	1.097	0	2.995
Program Characteristics			
Parent volunteer	0.54	0	1.717

N=1,246

Chi-square=480.468

Pseudo-R² (Nagelkerke)=.429

**Active-Passive Commute Binomial Logit Model, Spring 2009, Survey Respondents
Less than 1 Mile from School**

Independent Variables	B	Sig.	Exp(B)
Urban Form:			
Distance--less than 1/4, 1/2, 1 mile from school	-1.093	0	0.335
Street connectivity (CNR)	0.483	0	1.62
Slope	0.471	0.015	1.601
Parent Perceptions:			
Lack of crossing guards is a barrier	0.788	0.001	2.2
Intersection safety is a barrier	-0.412	0.02	0.663
Distance is a barrier	0.763	0	2.144
School encourages active modes	0.621	0	1.862
Parent/Household Characteristics:			
Household income (free and reduced lunch rates)	1.063	0.028	2.894
Number of additional siblings in K-5	0.317	0.003	1.373
Student Characteristics:			
Permission/ability to walk/bike alone by 5th grade	0.764	0	2.147
Program Characteristics:			
Participation in other encouragement activities	0.562	0.006	1.755

N=872

Chi-square=322.943

Pseudo-R² (Nagelkerke)=.415

Takeaways

A more complete analysis...

- Highlights the relative strength and importance of different variables in influencing mode choice
 - Distance
 - Street & sidewalk connectivity
 - Volunteers, encouragement, & program longevity
- Helps program coordinators and volunteers...
 - Identify opportunities
 - Understand barriers
 - Gauge potential impact
 - Design specific programs for specific conditions
 - Better evaluate their programs

Takeaways

Is the program working?

- YES!
 - For <1 mile households
 - For schools with a continuous base of effective volunteers

How can we make it better?

- Support volunteers
- Provide staff for schools w/o volunteers
- Develop program elements specific to a school's specific social and built environment
- Develop a survey instrument that more directly addresses the different program elements

Questions?



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- Evidence that the program is having an impact:
 - More kids permitted to walk/bike alone at elementary age
 - Correlation of parent's perceptions of school encouragement and active commute benefits with active mode choices
 - General upward trend in active mode splits among students <1 mile despite the outward dispersion of students
 - Correlation of the program variables with positive attitudes and households choosing active modes

What the Parent Survey doesn't tell us

- Marginal changes in mode share

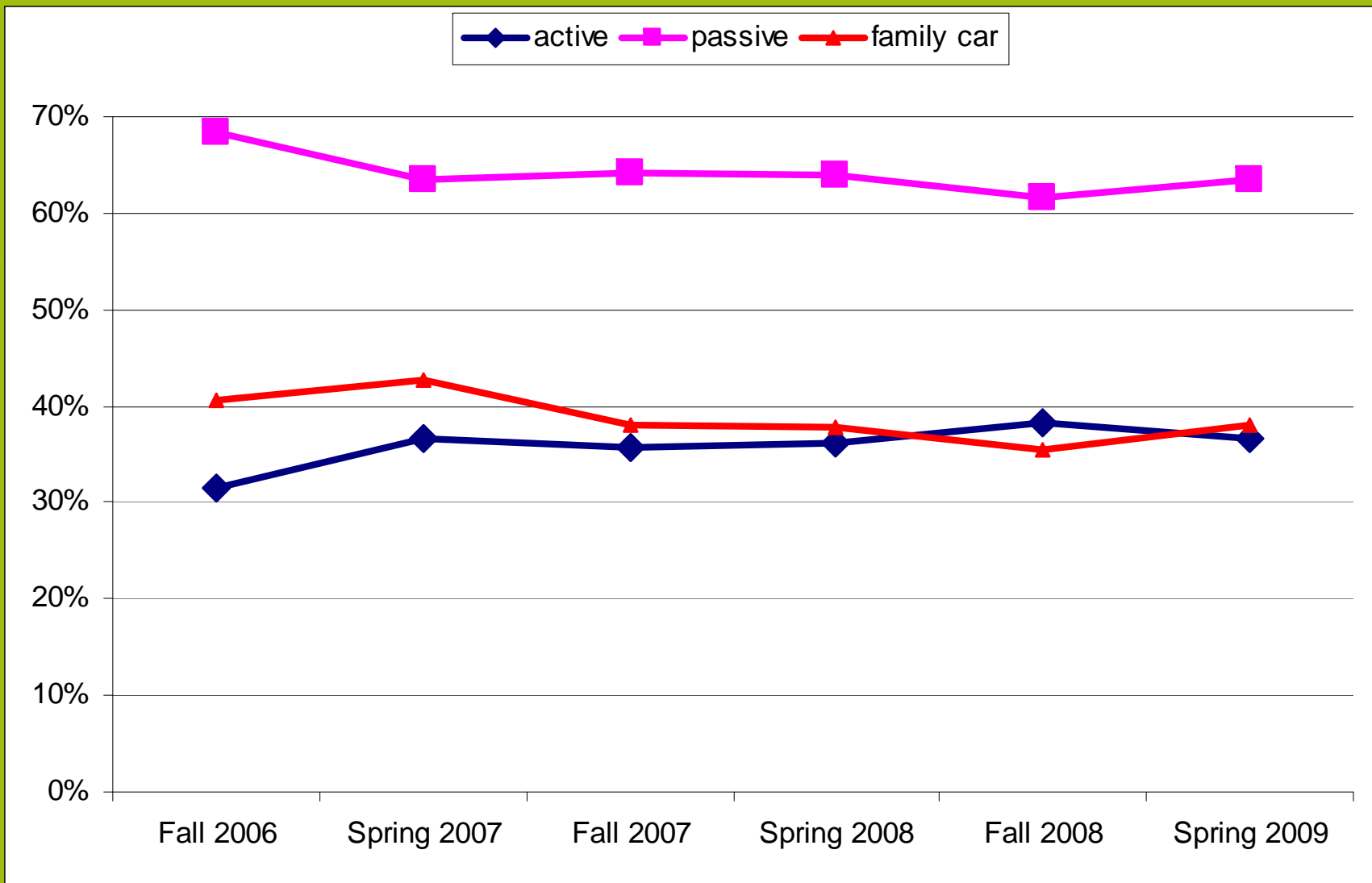
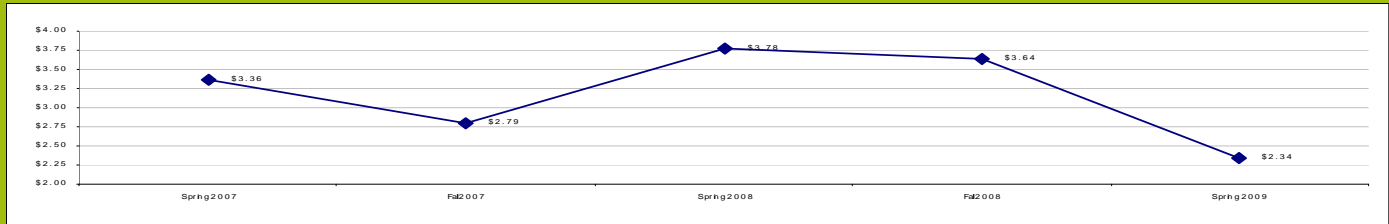
Q6: On most days, how does your child arrive at school and for home after school?
(circle one choice)

- *“We now walk at least once a week, but the car is still our primary means”*

What the Parent Survey doesn't tell us

- More about the impact of program components
 - What works?
- How many potential active commuters are there?

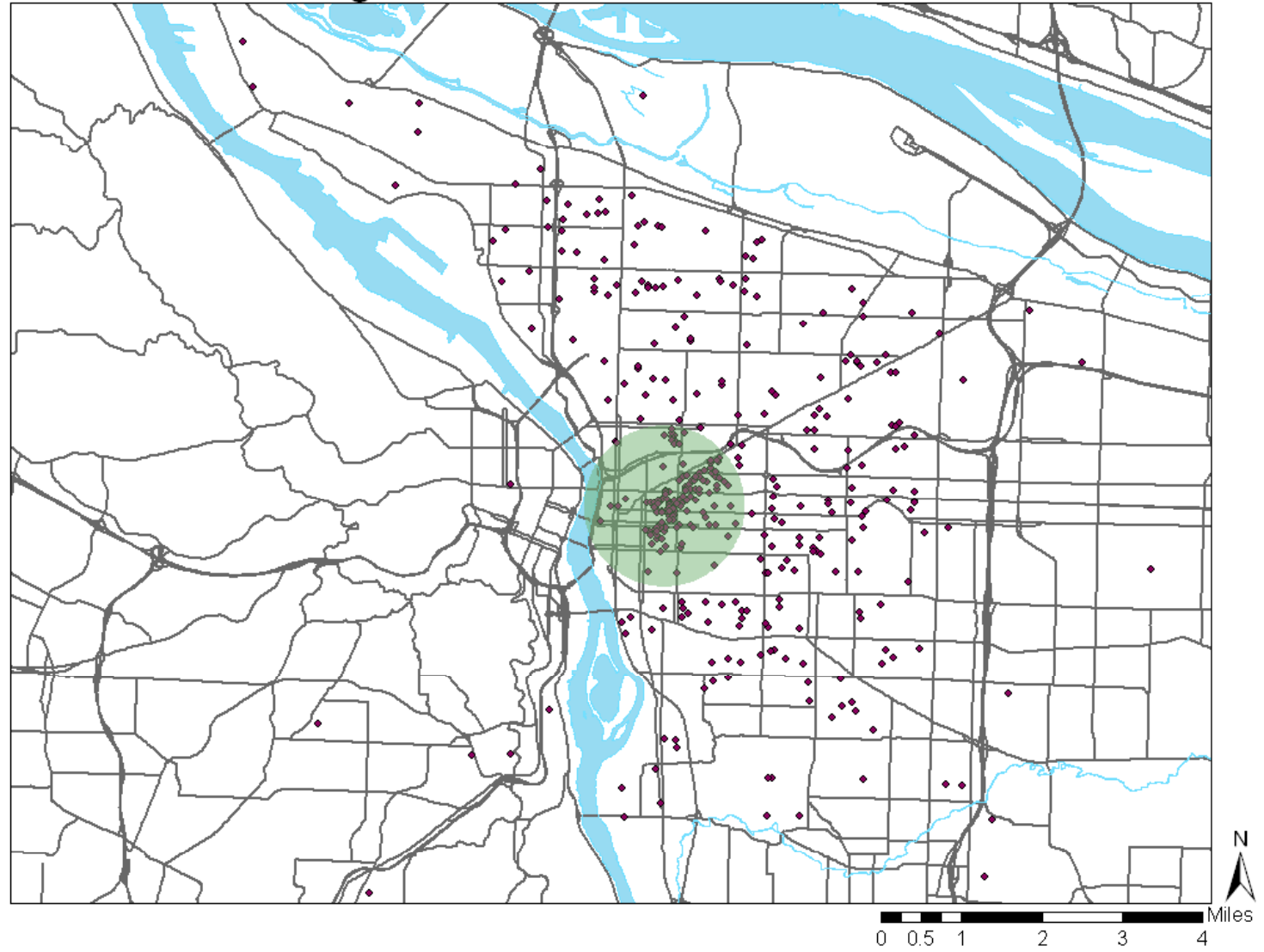




Distance

25.6% Active Commute Rate

Buckman Arts Magnet School



Easy
Eastside
Access

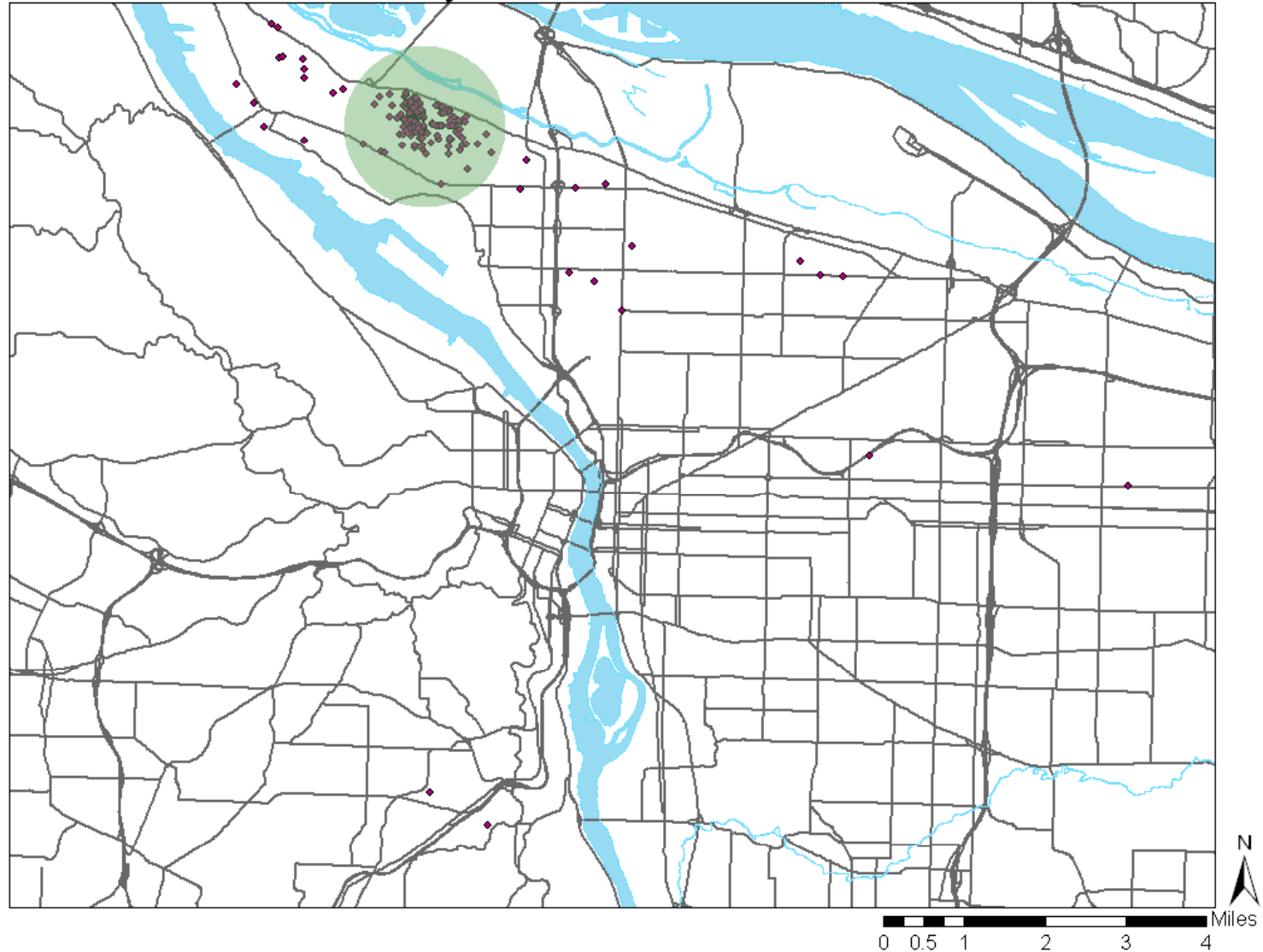
Close-in
Location

Magnet
Program

Distance

64.5% Active Commute Rate

Rosa Parks Elementary

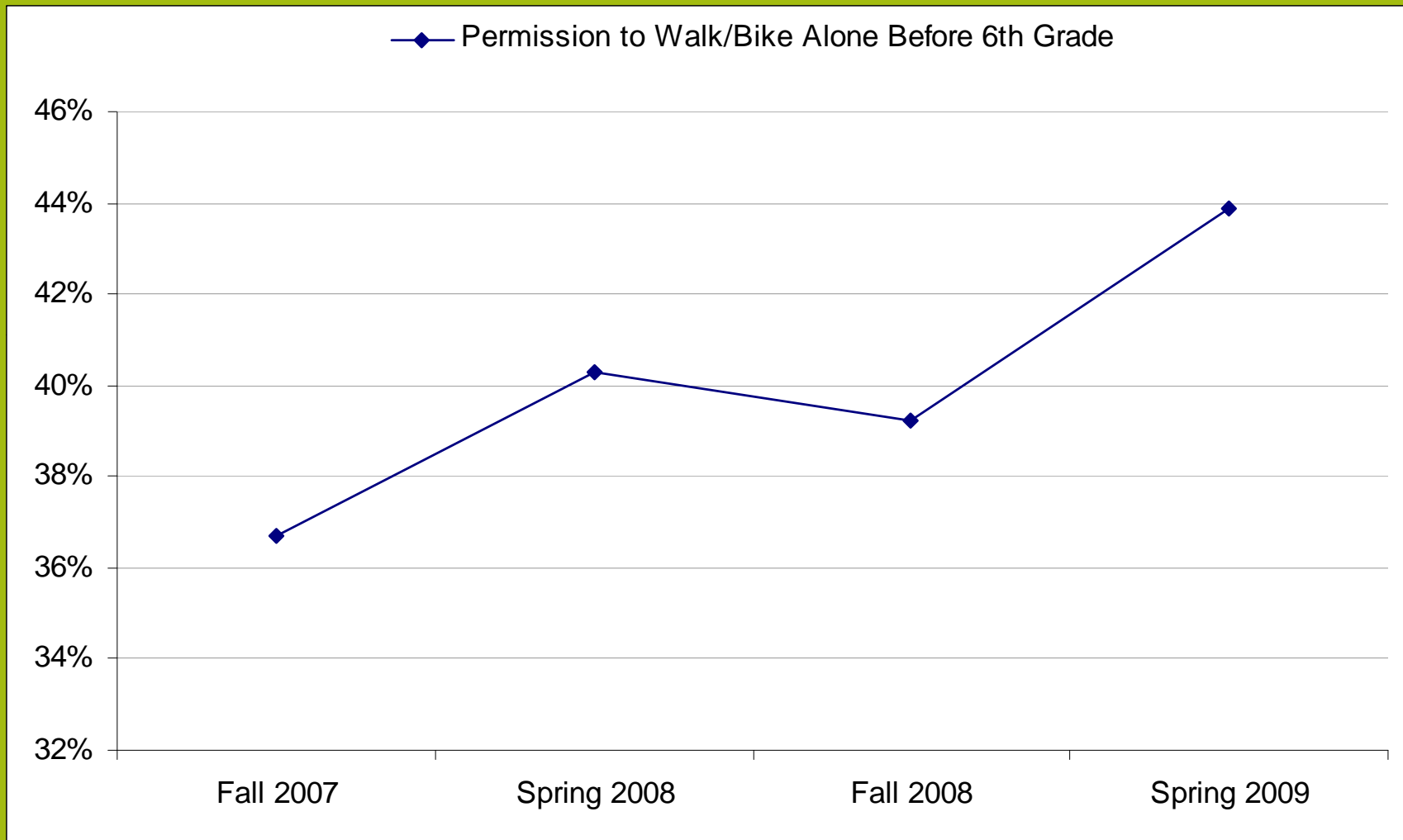


Siting coordinated with new mixed-income family-oriented housing development

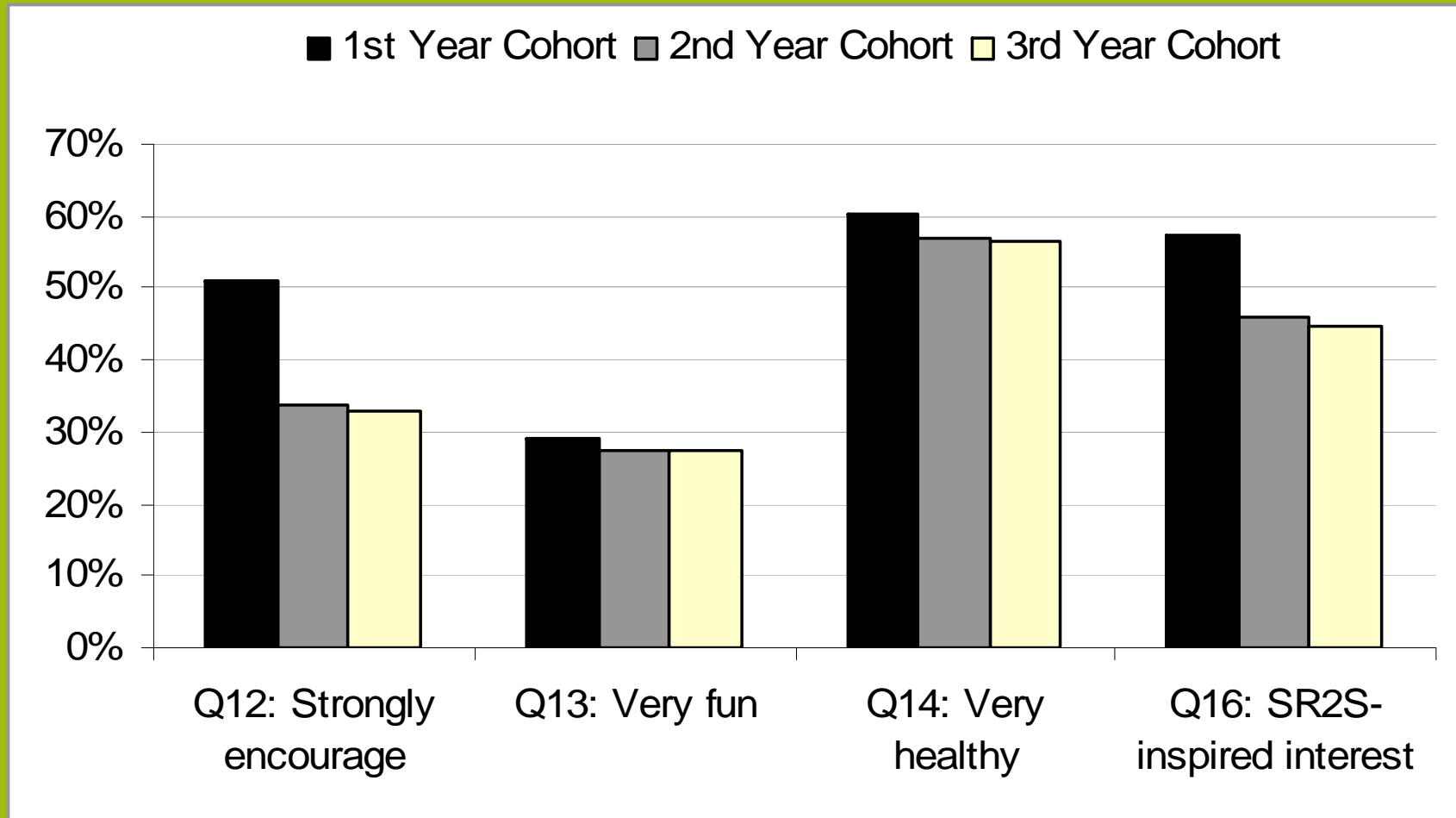
Strong neighborhood presence

Poor connectivity to outside areas

Child's Ability to Walk/Bike alone

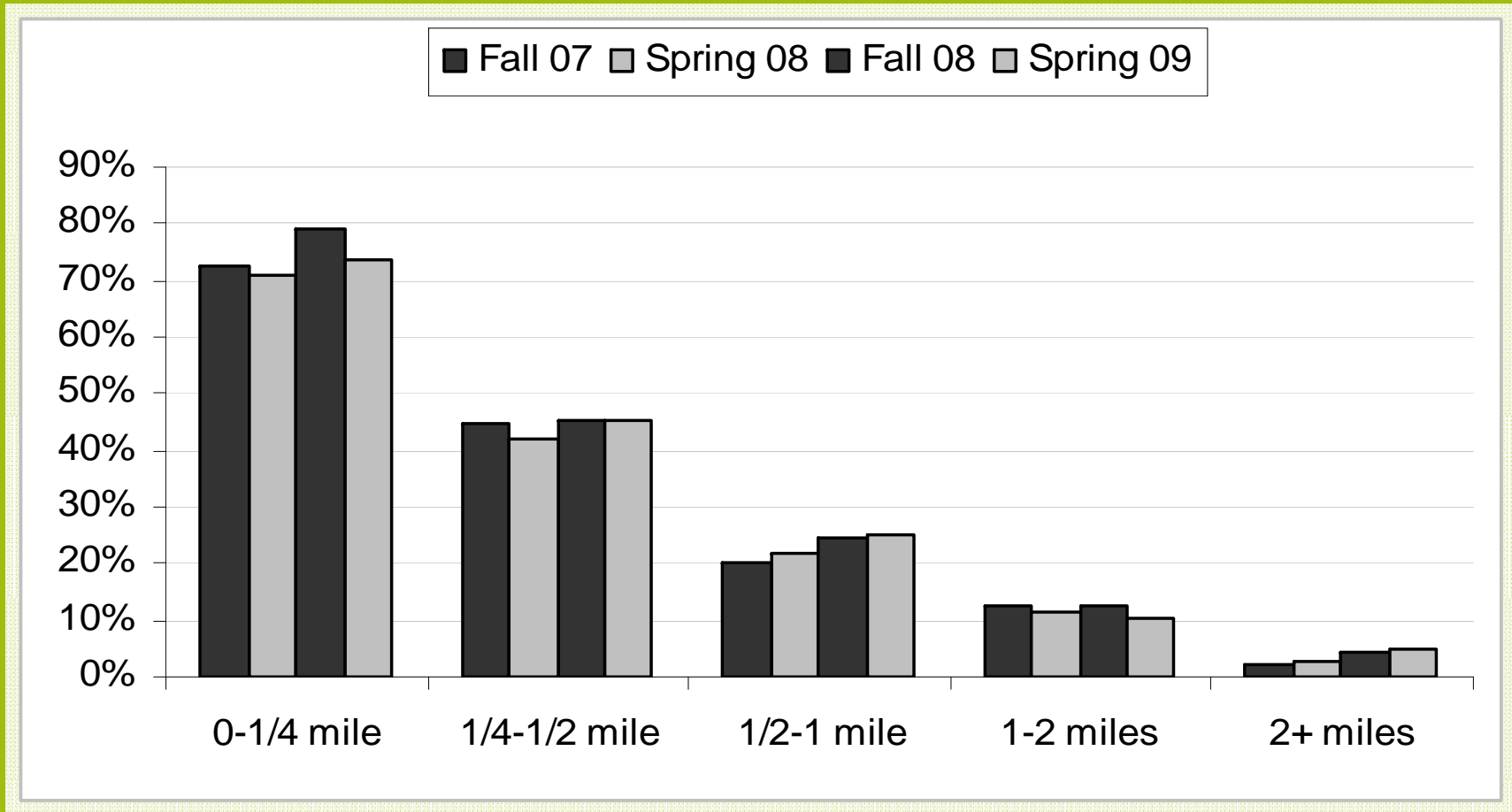


Parental Attitudes



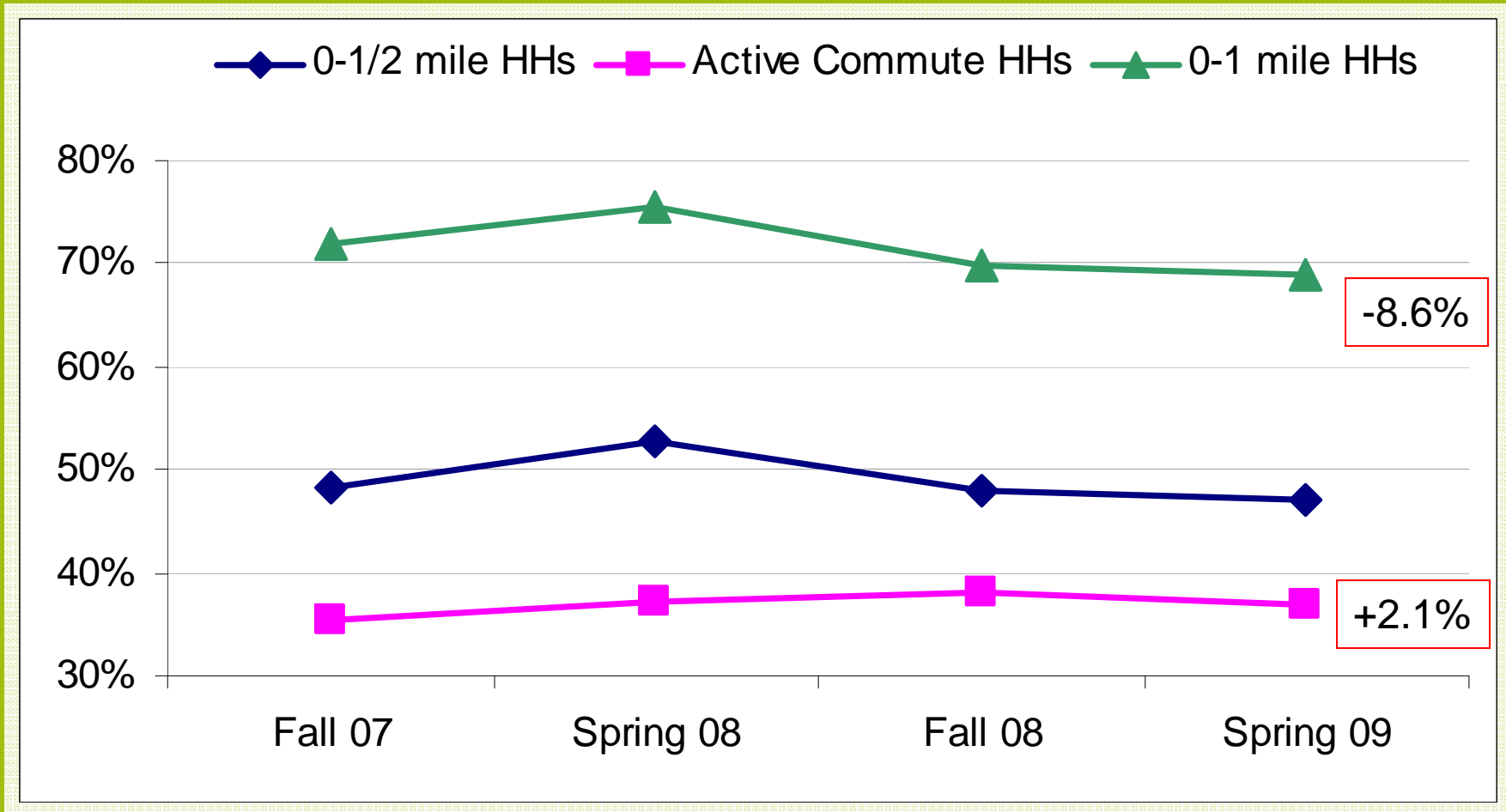
Distance

Percent of Active Commute Households by Distance, Fall 2007-Spring 2009



Distance

Student Household Dispersion and Active Commute Rates, Spring 2007—Spring 2009



Correlates Between Program Components and Parental Attitudes (spring 2009)

		Q12: School encourage ment	Q13: how much Fun	Q14: How health y	Q16: SR2S program impact	School volunte er	Dedicated school staff member	Walk/bi ke Day	Other encourage ment activities	Engineeri ng projects completed
Years of participation in SRTS program	<i>r</i>	.222**	0.053	.053*	.113**	.238**	.367**	-.241**	.087**	.523**
	<i>N</i>	1366	1347	1367	926	1401	1401	1401	1401	1401
Active primary mode	<i>r</i>	.185**	.107**	.098**	.106**	.140**	.065*	.061**	.069*	.058*
	<i>N</i>	1329	1309	1329	898	1363	1363	1363	1363	1363
Q16: SRTS program impact	<i>r</i>	.346**	.306**	.216**	1	.173**	.109**	.113**	.147**	.190**
	<i>N</i>	910	897	909	926	926	926	926	926	926
School volunteer	<i>r</i>	.330**	.159**	.090**	.173**	1	.356**	.210**	.367**	.551**
	<i>N</i>	1366	1347	1367	926	1401	1401	1401	1401	1401
Dedicated school staff member	<i>r</i>	.087**	0.032	.063**	.109**	.356**	1	-.146**	-.053**	.405**
	<i>N</i>	1366	1347	1367	926	1401	1401	1401	1401	1401
Walk/bike Day	<i>r</i>	.074**	.085**	.098**	.113**	.210**	-.146**	1	.279**	.059*
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Other encouragement activities	<i>r</i>	.314**	.149**	.120**	.147**	.367**	-.053*	.279**	1	.160**
	<i>N</i>	1366	1347	1367	926	1401	1401	1401	1401	1401
Engineering projects completed	<i>r</i>	.230**	.100**	0.043	.190**	.551**	.405**	.059*	.160**	1
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