## **RESILIENT COMMUNITIES**

RESOURCES AND CASE STUDIES FOR SMART SCHOOL SITING



### **Our Mission**

To protect Georgia's natural resources for present and future generations by advocating sound environmental policies, advancing sustainable growth practices and facilitating common-ground solutions to environmental challenges.

## **School Siting**

The Sustainable Growth program is funded by the EPA and the Kaiser Foundation to help educate and advance the use of the EPA's new, voluntary *School Siting Guidelines* document.

# OLD SCHOOL, NEW SCHOOL THIS PLACE, THAT PLACE

AN INTRODUCTION TO UTILIZING THE EPA SCHOOL SITING GUIDELINES

## Dr. Seuss Wisdom

"Unless someone like you cares a whole awful lot, nothing is going to change. It's not."



# VALUE OF COMMUNITY-CENTERED SCHOOLS

Development Patterns: Implications for community competitiveness and sustainability

Before most planning regulations



After planning regulations





262,000 schools

<95,000 schools

1930:

2011:

2030: Est. 60 million students in the US 2030: # of schools ???







## Greater intake/ body weight ratio

Behavioral differences



# CHILDREN ARE NOT LITTLE ADULTS



## Rapid development

Vulnerabilities to toxins from chronic illnesses

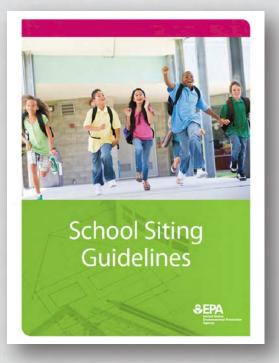




Increased air intake during outdoor activity



# EPA SCHOOL SITING GUIDELINES

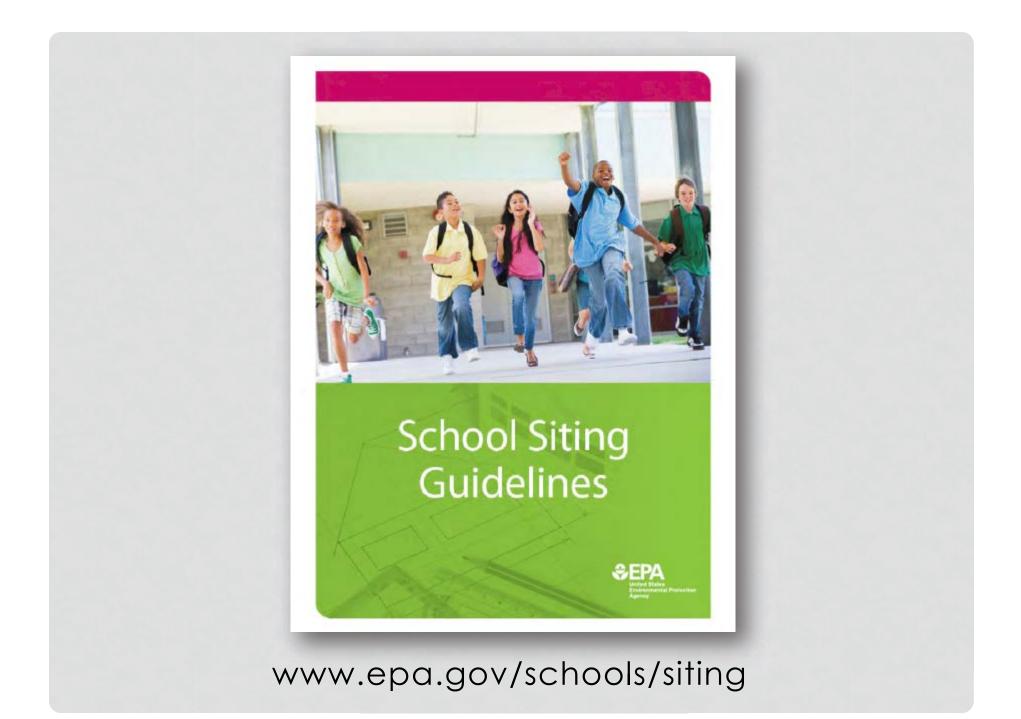


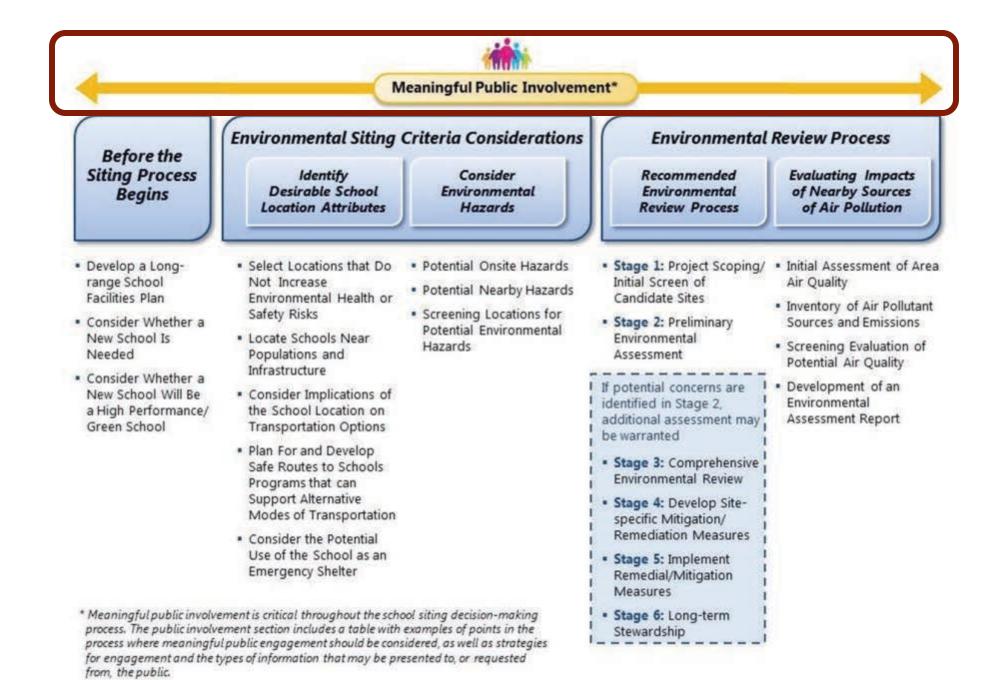
- Voluntary
- Directive from Congress to create model guidelines accounting for:
  - Special vulnerability of children to hazardous substances or pollution exposures
  - Modes of transportation available to students and staff
  - The efficient use of energy
  - The potential use of a school as an emergency shelter

# THESE GUIDELINES:

WILL	WILL NOT	
Provide a resource	Mandate school location choices	
Emphasize the need for public involvement	Provide a detailed guide on how to engage the public	
Provide guidance on locating school facilities	Apply retroactively to previous siting decisions	
Encourage holistic thinking	Specify cleanup standards, etc. for sites	







## **School System**

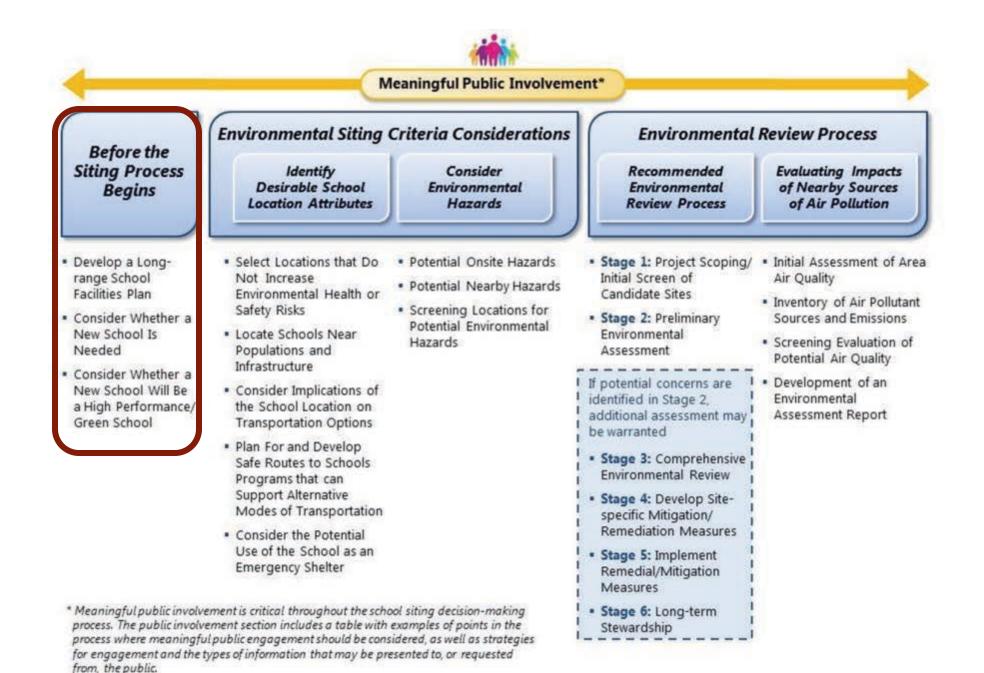
## Local Gov't

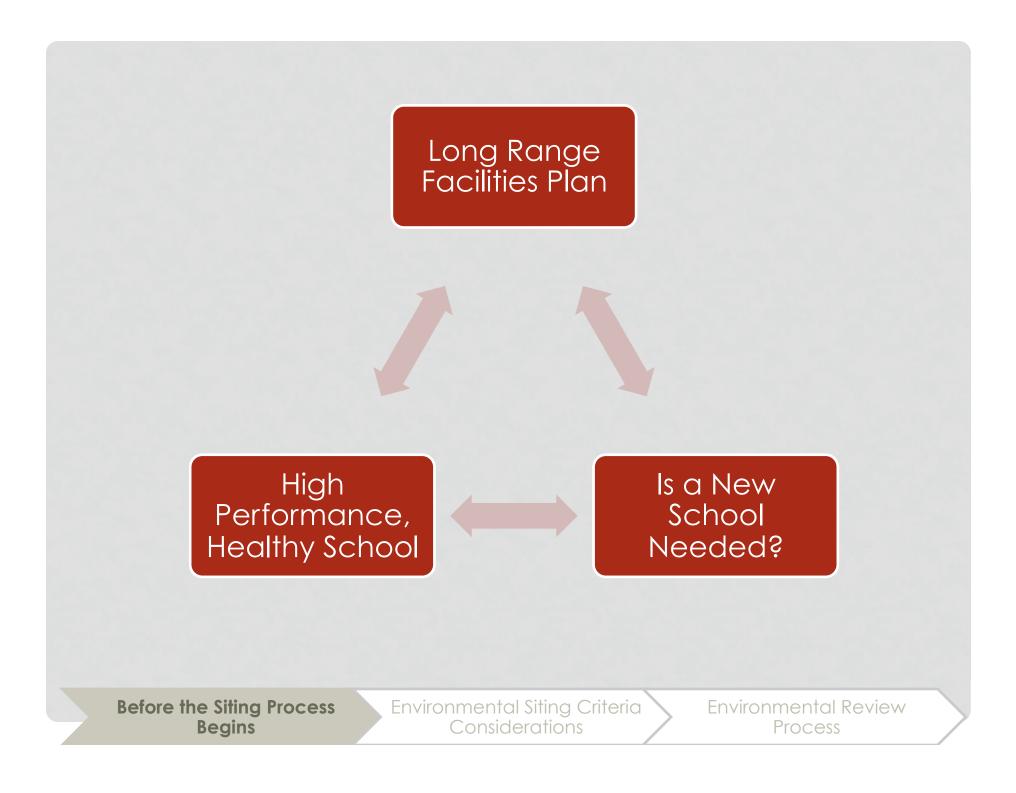
- Officials
- Planning
- Public works
- Engineering

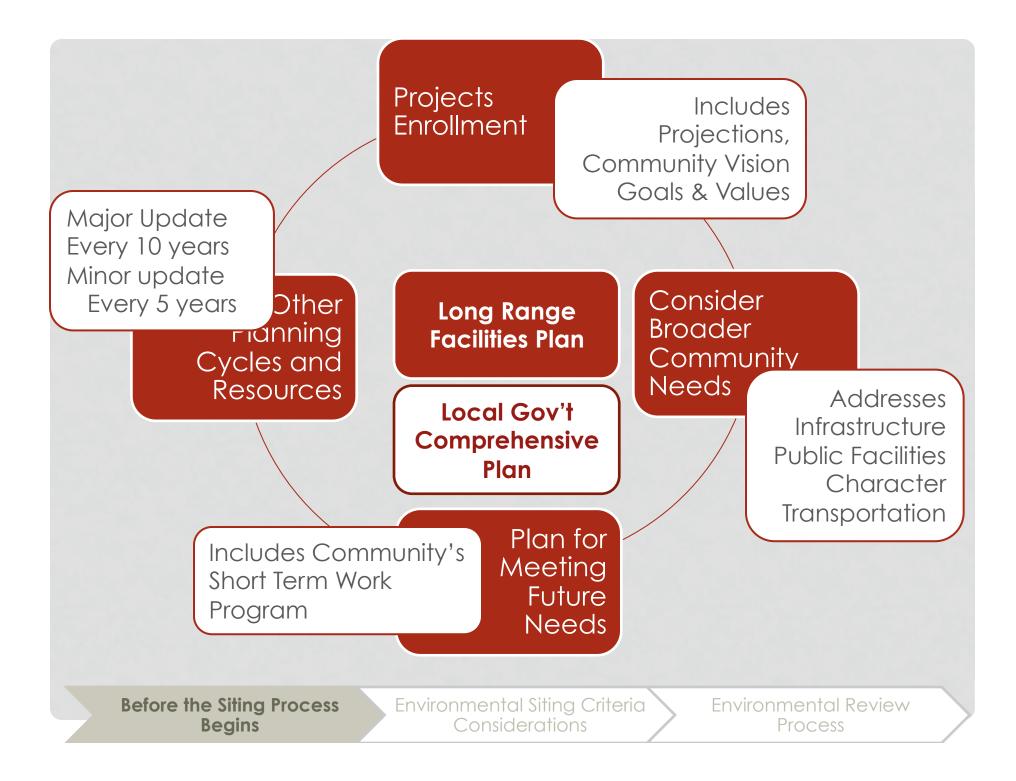
## School Users

- Teachers
- Students
- Parents
- Family

## Community

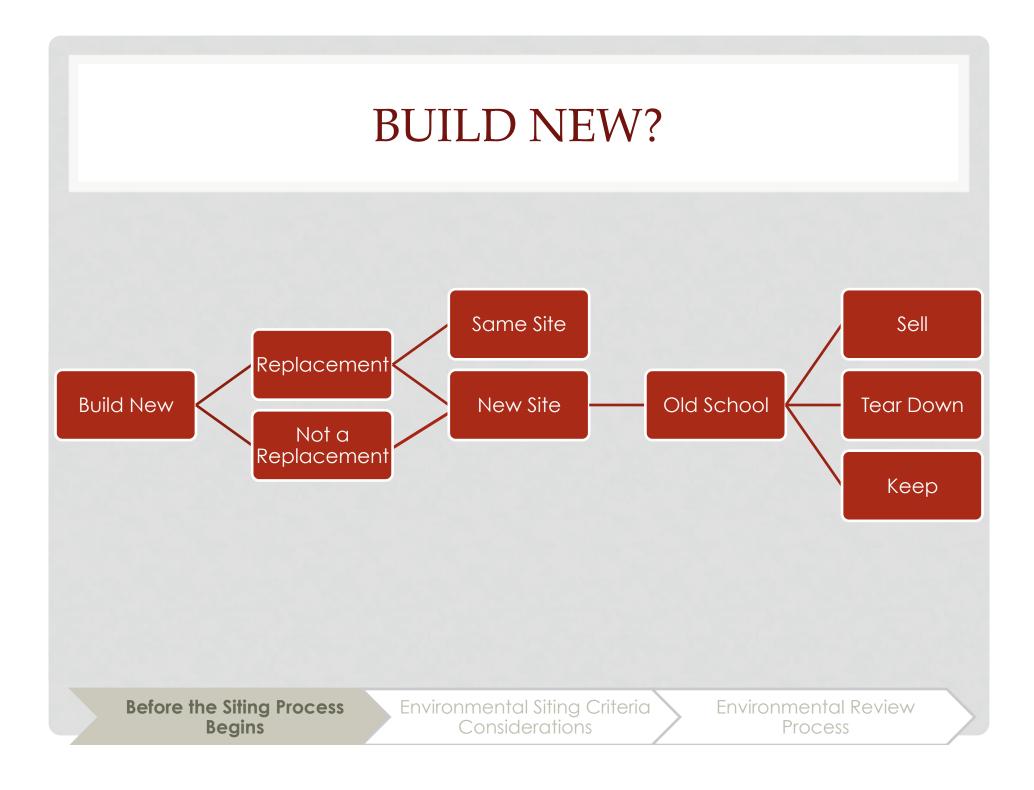


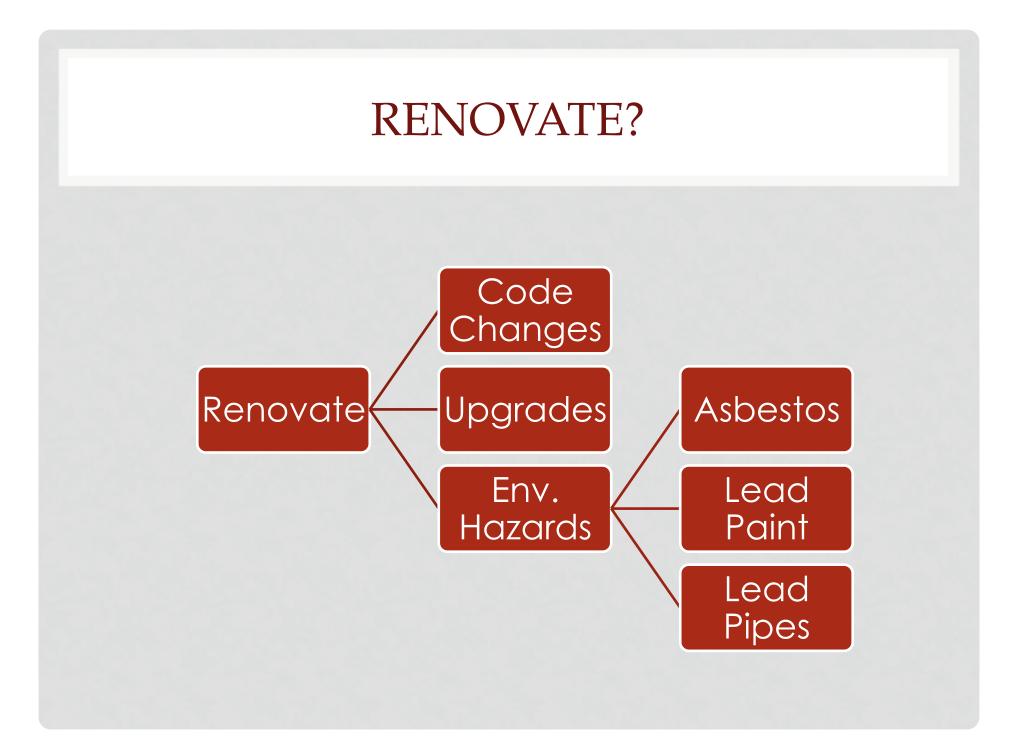




# BUILD NEW? RENOVATE?

Before the Siting Process Begins Environmental Siting Criteria Considerations





# green school

# \grEn skül \n.

a school building or facility that creates a healthy environment that is conducive to learning while saving energy, resources and money

Before the Siting Process Begins Environmental Siting Criteria Considerations

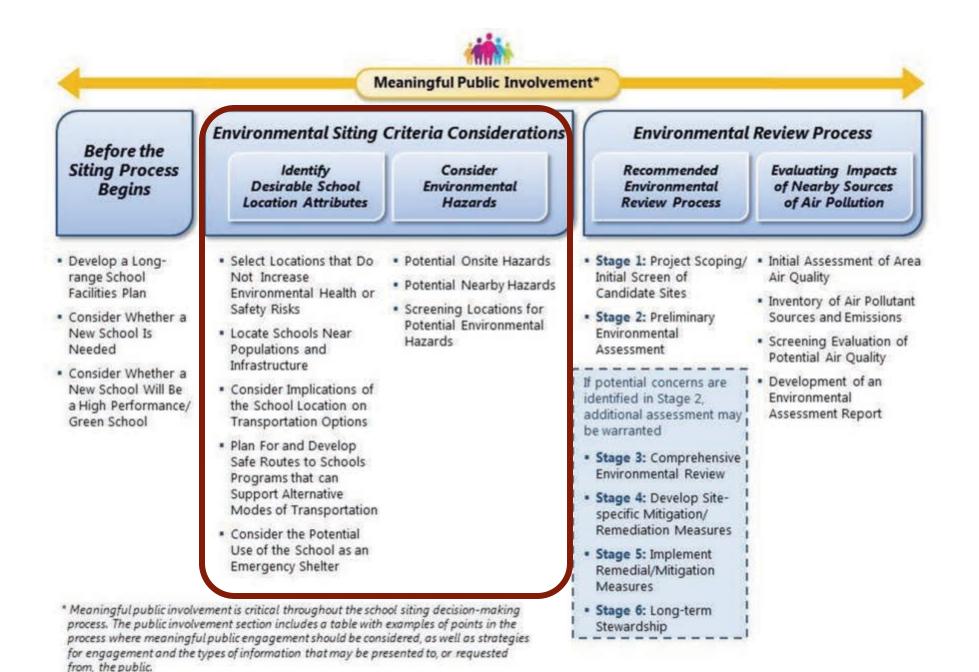
Health 25% Benefits reduction in asthma 15% reduction in colds & flu

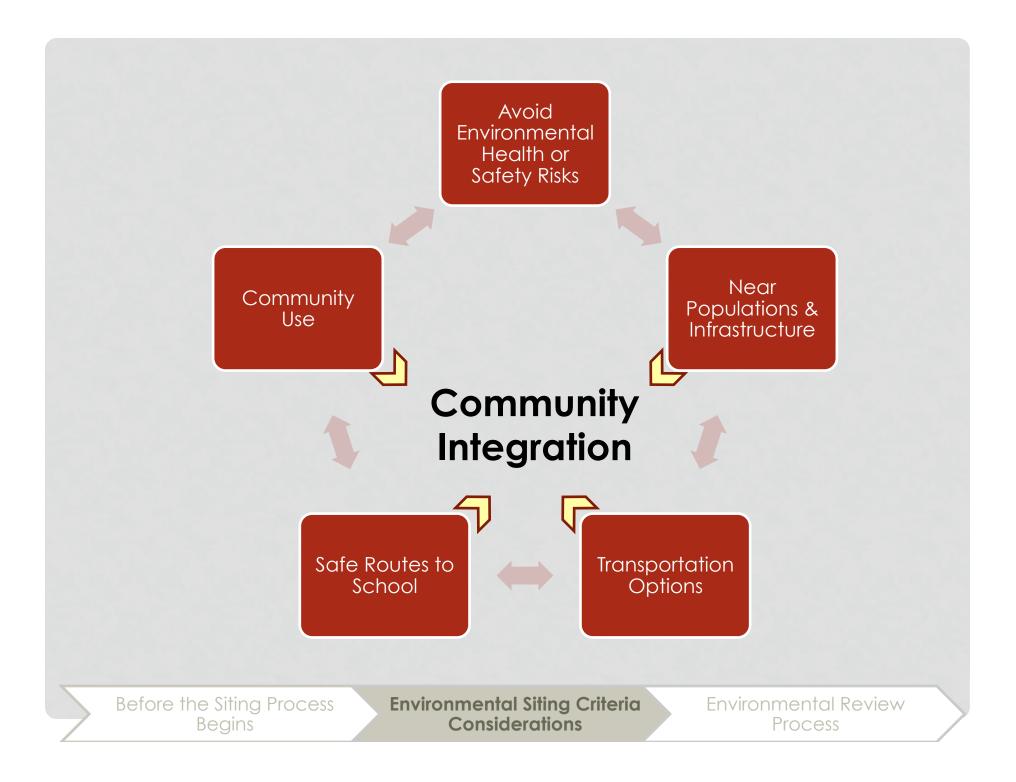
Learning 3%

Benefits increase in learning, productivity & performance 3% reduction in teacher turnover

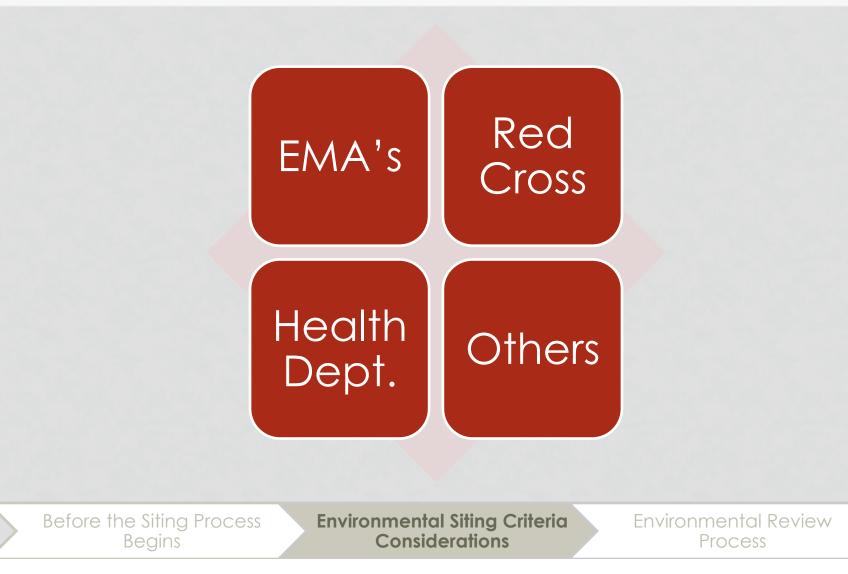


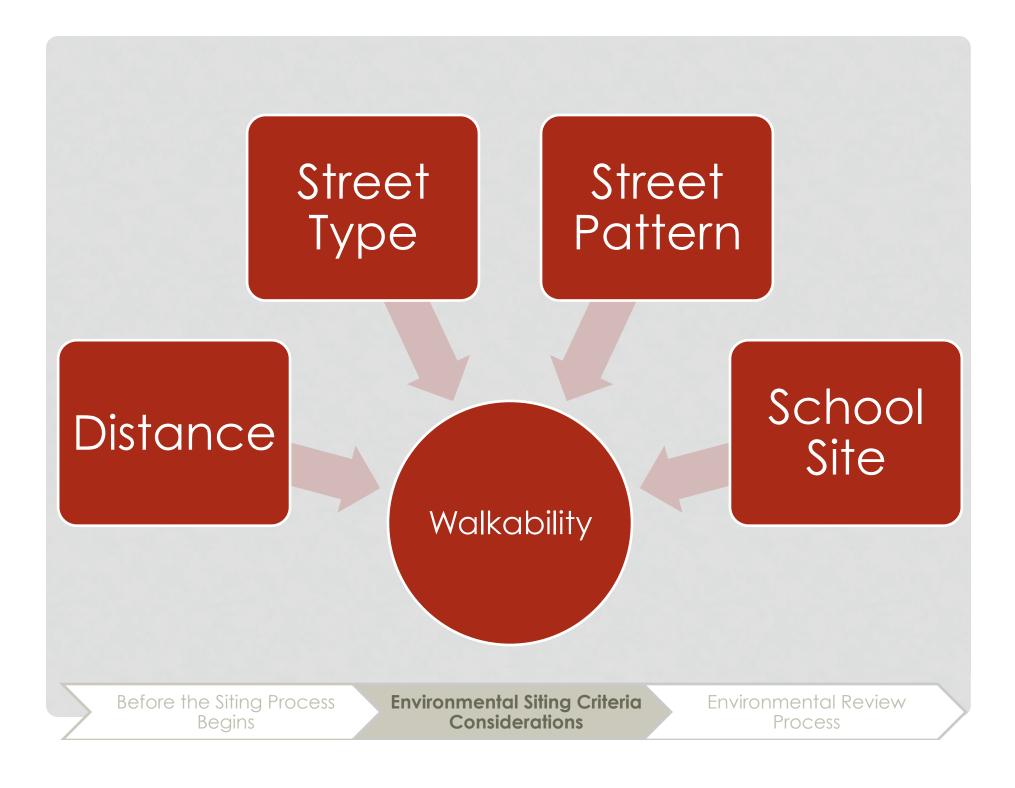
**Operational** Reduced teacher sick days Insurance and risk related



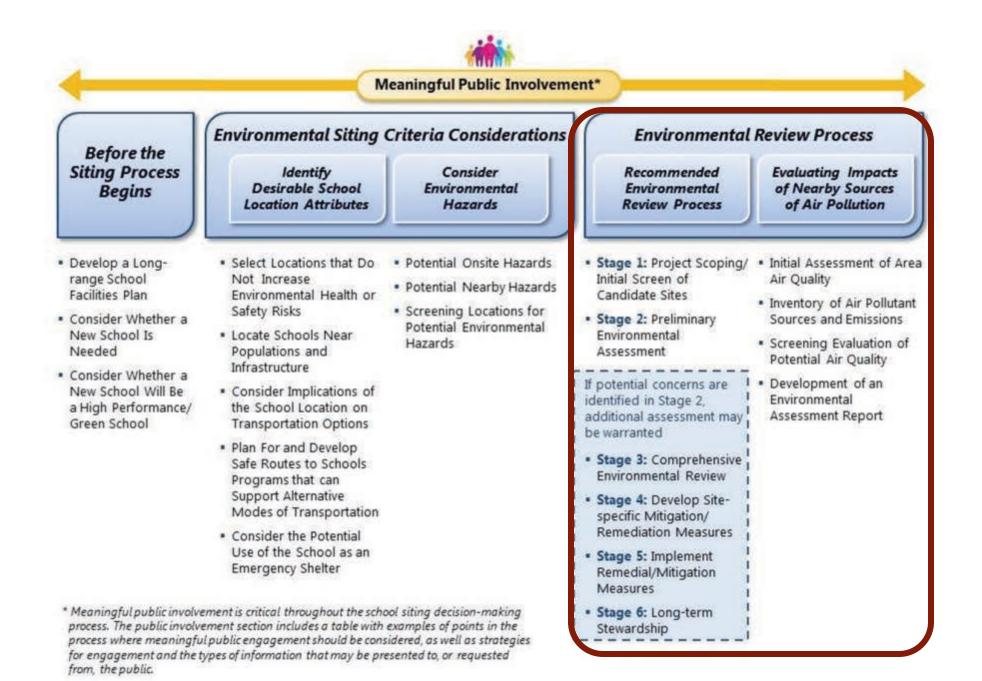


# EMERGENCY SHELTER









# POTENTIAL NEARBY HAZARDS

Potential Hazard	Potential Variables	Potential Mitigation Options N=New schools E=Existing structure	
Air Pollution (see Section 8.1)	<ul> <li>Type and volume of contaminant released</li> <li>Distance from the source</li> </ul>	<ul> <li>Adopt an area-wide approach to address air pollution issues (N/E)</li> <li>Maximize distance from</li> </ul>	
	<ul> <li>Nearby traffic type, fuel, volume and speed (mobile sources)</li> </ul>	transportation or other pollution sources (N)	
	<ul> <li>Stack height, facility practices and type of pollution control employed (stationary/point sources)</li> </ul>	<ul> <li>Vegetation buffers (N/E)</li> <li>Anti-idling policies (N/E)</li> <li>Limiting bus or personal car use or</li> </ul>	
	<ul> <li>Timing of operations (stationary/point sources)</li> </ul>	and near campus (N/E)	
	<ul> <li>Meteorological conditions (e.g., prevailing wind direction and wind speed)</li> </ul>	<ul> <li>Enhanced indoor filtration/air cleaning (N/E)</li> </ul>	
	<ul> <li>Atmospheric stability and mixing</li> <li>Regulatory compliance</li> </ul>	<ul> <li>Locating sensitive activities and outside air intakes away from sources (e.g., locate playgrounds</li> </ul>	

Before the Siting Process Begins Environmental Siting Criteria Considerations

### School Siting Guidelines

### Exhibit 6: Screening Potential Environmental, Public Health and Safety Hazards

**IMPORTANT**: This table is intended to assist with the initial screening of candidate locations but is NOT a substitute for case- and site-specific evaluation of potential risks and hazards. It is intended to be used in conjunction with the example Environmental Review Process (see Section 5) and Evaluating Impacts of Nearby Sources of Air Pollution (see Section 6). For more information on typical environmental hazards that may be encountered during the school siting process, see the Quick Guide to Environmental Issues in Section 8). Existing applicable federal, state, tribal or local statutes, ordinances, codes or regulations take precedence over the recommendations contained in this table. Users should check with state, tribal and local authorities for applicable requirements or other recommendations.

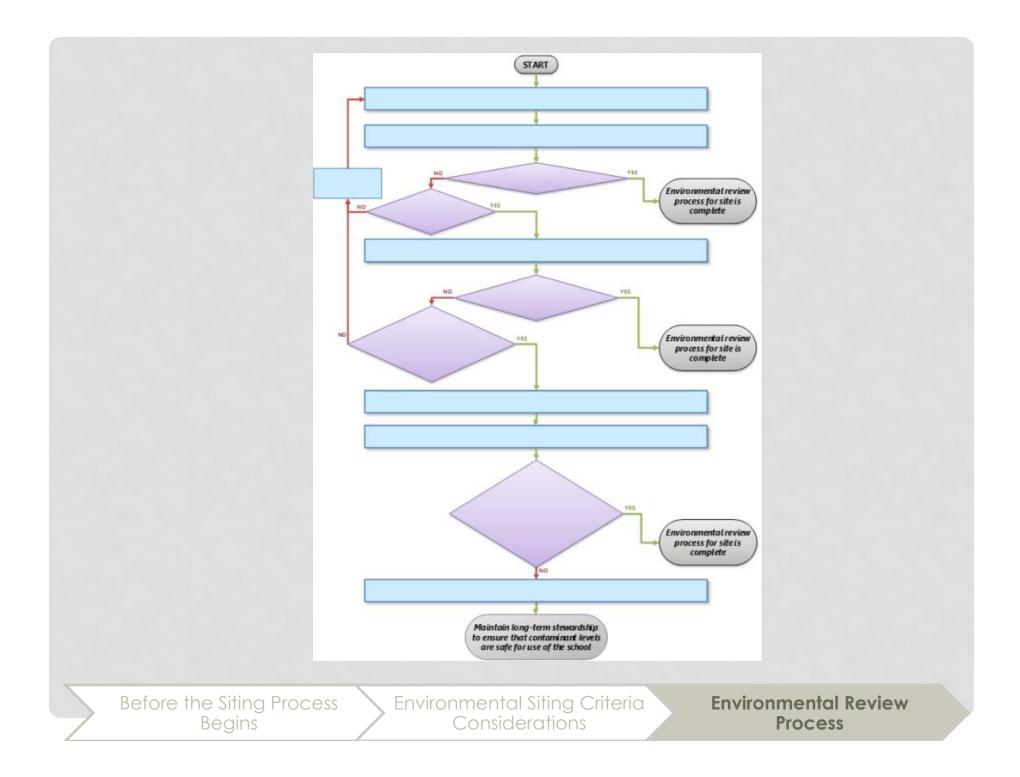
Feature/Land Use	Description	Potential Hazard(s)	Recomme	Additional	
			Screening Perimeter	Evaluation	Information <sup>51</sup>
Onsite buildings or structures (including all leased space)	<ul> <li>All onsite or adjacent buildings/structures slated for reuse, renovation or demolition.</li> </ul>	<ul> <li>Legacy contaminants in existing structures including lead and other heavy metals, asbestos, PCBs, vapor intrusion/(VOCs), mold, radon, pesticides, pests</li> <li>For existing school buildings, chemicals from laboratory, art, shop, drama, maintenance, cleaning, grounds</li> <li>Structure may not meet current building codes (e.g., for seismic activity)</li> </ul>	<ul> <li>All onsite structures slated for demolition, reuse or renovation</li> </ul>	<ul> <li>Evaluate for the presence of hazardous materials or conditions. Age, location, condition and type of structure, and the history of use are critical factors to consider in assessing potential risks. Identify all potential hazards and remediate as appropriate.</li> </ul>	<ul> <li>Lead</li> <li>Heavy Metals</li> <li>Asbestos</li> <li>PCBs</li> <li>Vapor Intrusion, (VOCs)</li> <li>Mold</li> <li>Radon</li> <li>Mercury</li> <li>Pesticides</li> <li>Air Pollution</li> <li>Risk Assessment</li> </ul>

<sup>51</sup> See the Resources page of the guidelines website for links related to the topics listed under the 'Additional Information.' (www.epa.gov/schools/siting/resources)

Before the Siting Process Begins Environmental Siting Criteria Considerations

Environmental Review Process

53



# AIR POLLUTION

## Mobile Sources

• Cars, trucks, buses, etc.

## Stationary Major Sources

• Factories, power plants, etc.

## Local Area Sources

• Auto-body paint shops, dry cleaners, etc.





Before the Siting Process Begins Environmental Siting Criteria Considerations

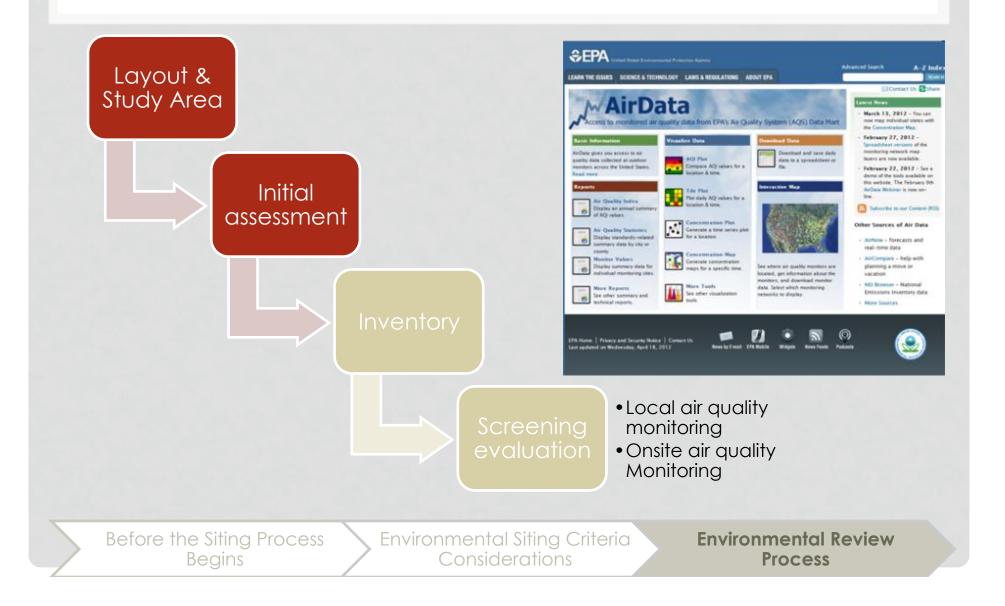
# AIR POLLUTION

## • Types

- Criteria pollutants
- Air toxics
  - www.epa.gov/air/criteria.html



# ASSESSING AIR POLLUTION RISKS



Environmental	Study area Pollutant Inventory process		
Assessment			
Report	Modeling approach & modeled concentrations		
	Monitoring approach and results		
	Acute and chronic screening criteria		
	Comparison of pollutants against the screening criteria		
	Potential for multi-pollutant impacts		
	ID and evaluation of potential contributing sources		
	Conclusions & recommendations		
	Uncertainty & limitations		
Before the Siting	Process Environmental Siting Criteria Environmental Review		

## MEANINGFUL PUBLIC INVOLVEMENT



## Who is the public?

### School System

- What are the state requirements?
- What size should the school be?
- How much property do we need?
- How much will it cost to buy the property and construct the school?
- How much will it cost to own and operate the school?

## School Users

- What will the school and classrooms look like?
- What amenities will be provided?
- Will the surroundings stimulate learning?
- How will students get to school? Can they walk?
- Is the school safe?

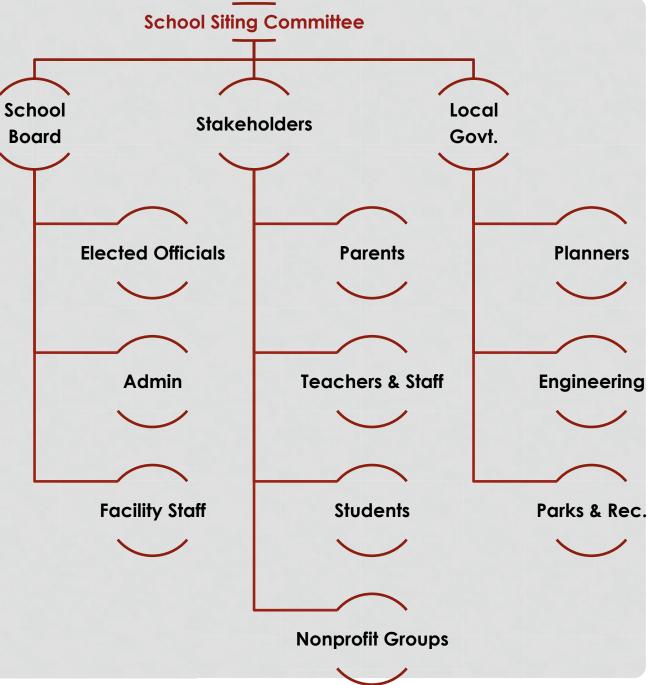
## Community

- Do we need a new school? Can the existing school be renovated?
- Will the current school close? What will happen to the building?
- How will students get to school? Can they walk?
- Will the school, playgrounds, etc. be accessible to the community?
- Are there environmental hazards?
- Can we have input about where new schools are located?

#### Local Government

- What are the water and sewer needs of the new school? Do we have adequate capacity?
- Will the surrounding roads support the anticipated traffic?
- Are the school locations coordinated with the future land use plan?
- How will the location impact the demand for local government services?





# GEORGIA CONSERVANCY

SCHOOL SITING TRAINING MODULES AND GUIDES

## RESOURCES

#### **Professional Training**

- One-hour training and user's guide
- Three-hour training and user's guide with supplemental break-out exercises

#### Parent/Community Training

 Half hour/Hour training and user's guide (forthcoming)

#### **Technical Services**

#### www.georgiaconservancy.org/schoolsiting



## ACKNOWLEDGEMENTS

This project was funded by a grant from the U.S. Environmental Protection Agency, Source Reduction Assistance Grant Program (Multi-Regions Projects)

#### Project Team







#### Consultant



The examples included in these presentations are intended for discussion purposes only. Nothing in this presentation imposes legally binding requirements on the U.S. Environmental Protection Agency (EPA), states, or school systems. Similarly this presentation does not confer legal rights or impose legal obligations upon any member of the public. The regulatory obligations of a school or school district are determined by statutes, regulations, or other legally binding requirements. In the event of a conflict between the discussion in this presentation and any statute or regulation, this presentation would not be controlling. The presentation and publications listed herein from entities other than EPA reflect the view of the entity in question and do not necessarily reflect the view of the EPA.

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Border designates Georgia Conservancy training materials only – images not found in EPA School Siting Guidelines

## **Example Training Materials**



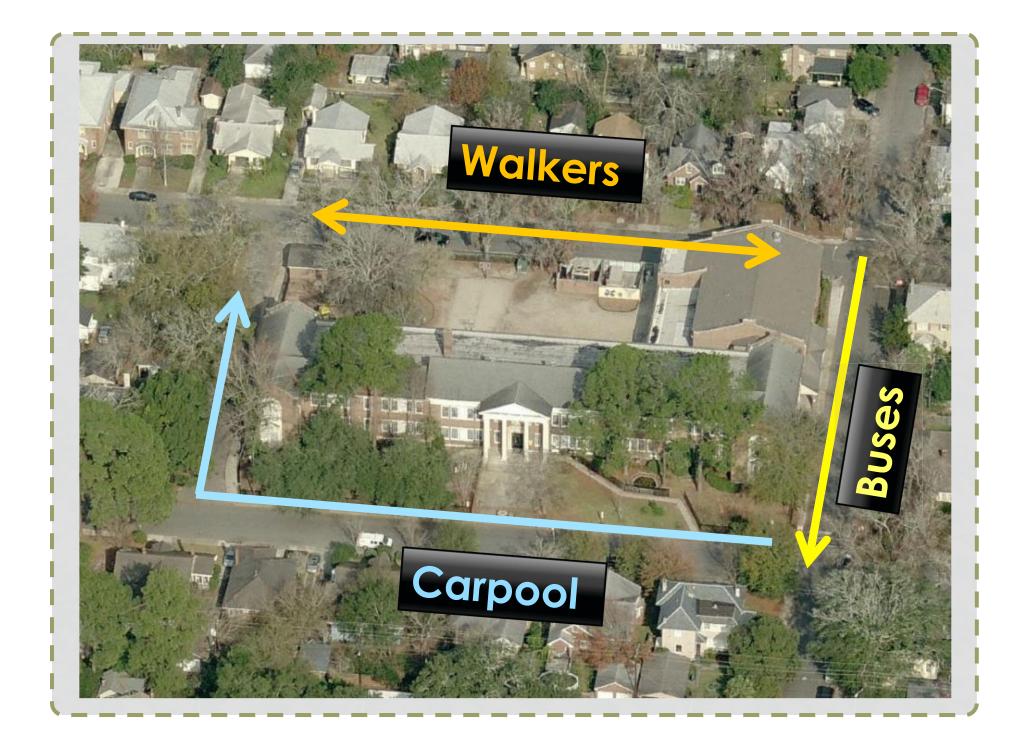








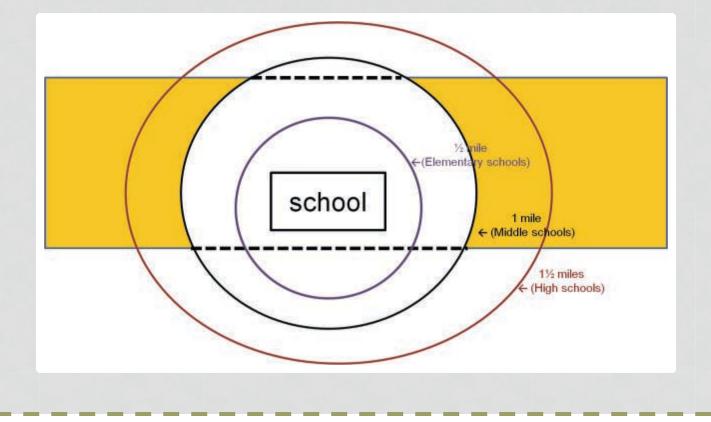
# BUT WHAT ABOUT CIRCULATION AND PARKING?

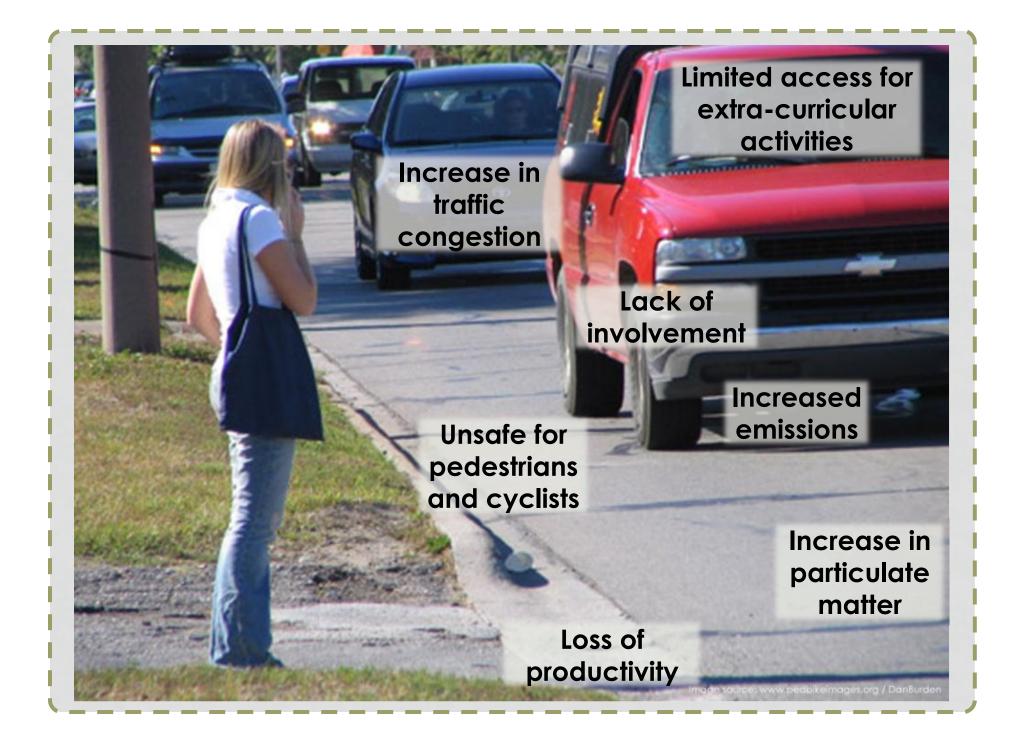


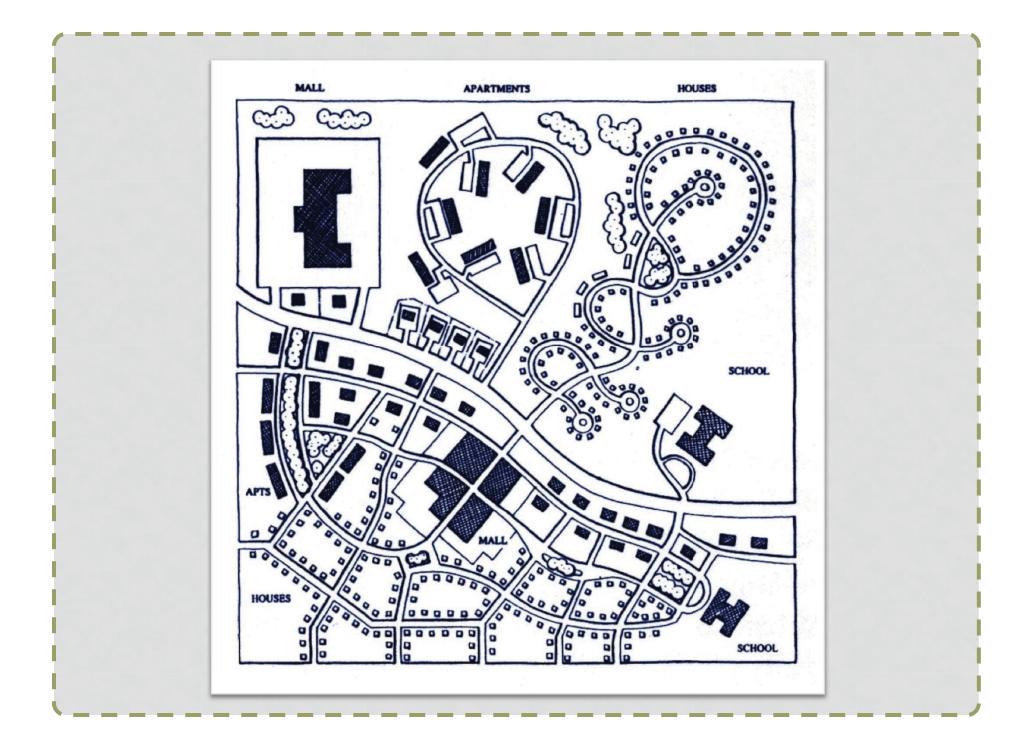
Commonly accepted maximum walking/ **biking distances** 

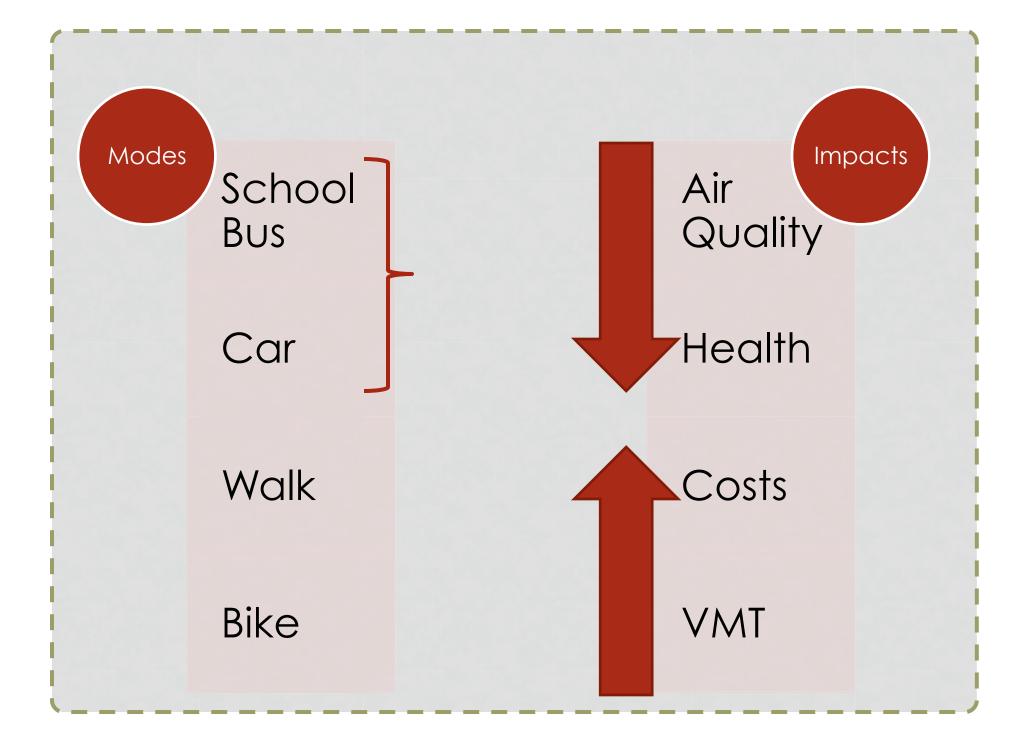
- Elementary schools: 1/2-mile radius
- Middle schools: 1-mile radius
- High schools:

- $1\frac{1}{2}$ -mile radius









The prevalence of obesity among children and

# adolescents more than tripled from

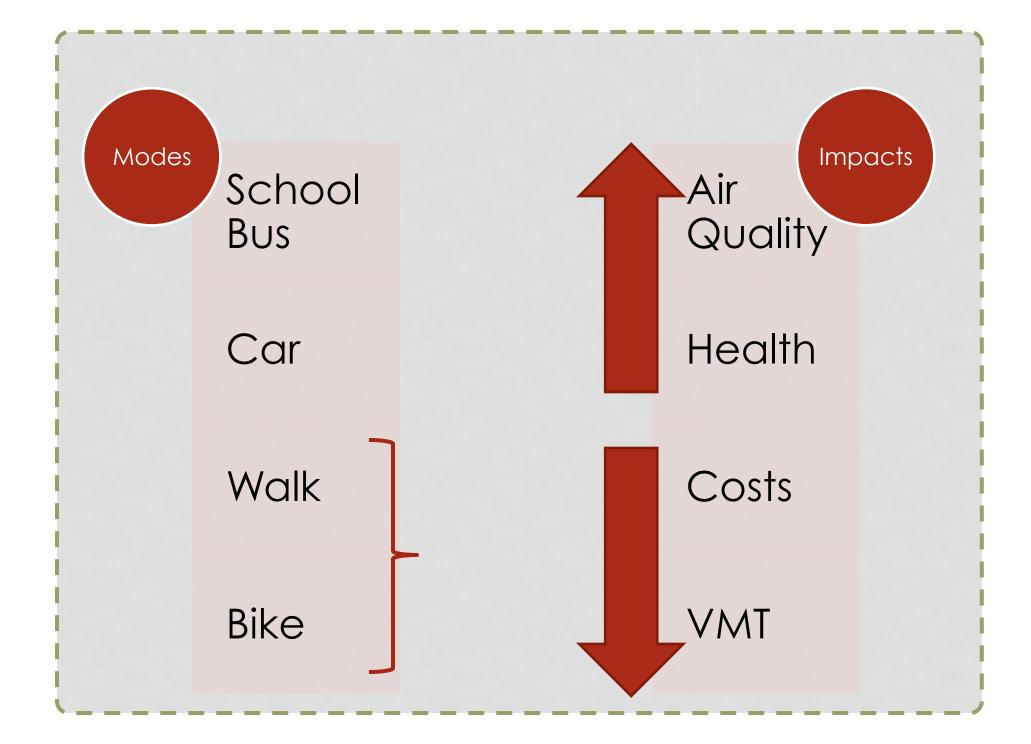
1980 to 2008.

# In 2008, more than one third of U.S.

children and adolescents aged 6-19 were

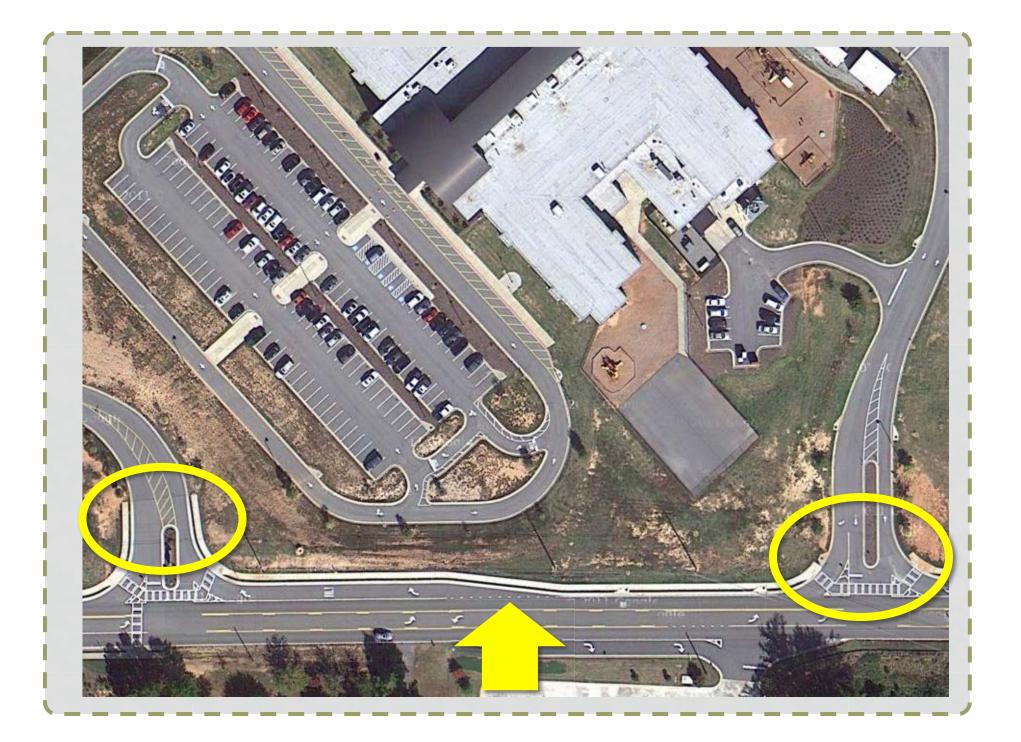
overweight or obese.













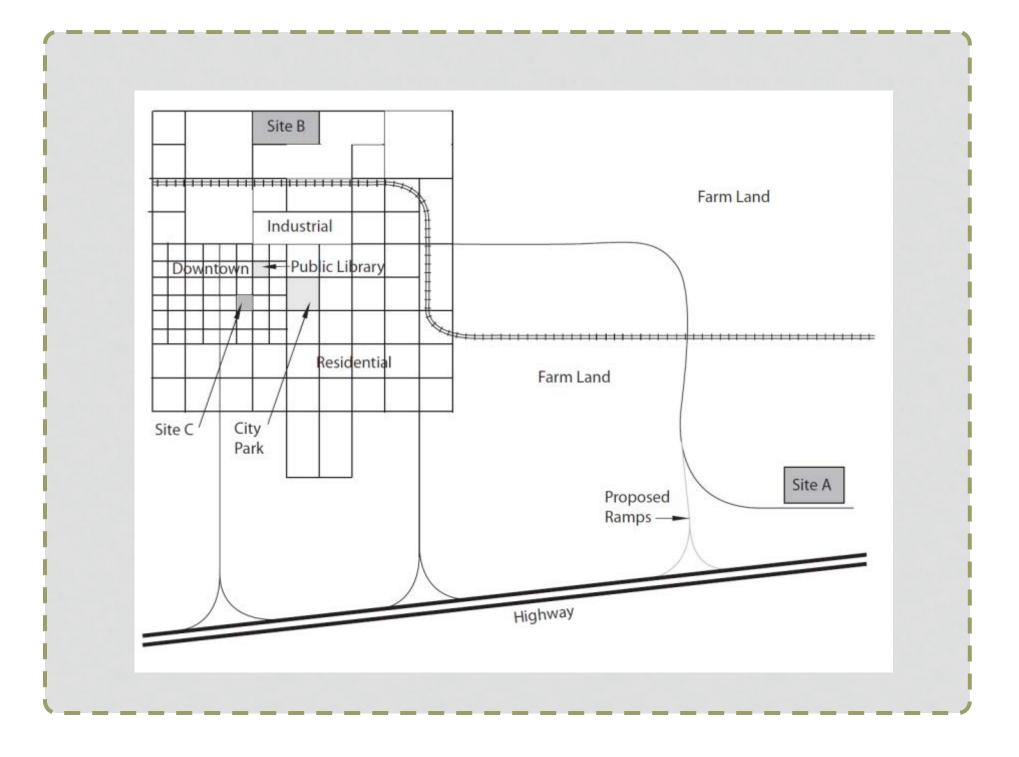
# EDGEWATER ELEMENTARY

#### EXERCISE 2

The Brafferton school district is considering whether or not to replace the c. 1927 Edgewater Elementary School, with a anew facility to upgrade facilities and take advantage of a no-interest federal loan. The current school enrollment is 475 students, but is expected to increase to 600 students within the planning horizon. You are members of a site selection committee that has been asked to recommend the preferred option for a school site to the school board. Your group may want to decide to represent specific perspectives (city planner, parent, superintendent, equity advocate, environmental justice advocate, active transportation advocate, etc).

The State Guideline for Educational Facility Site Selection states the minimum useable acreage requirements for and Elementary School are five acres plus one acres for each 100 children. In developed areas, a variance of the minimum useable acreage requirements may be made by the State DOE Facilities Section Director when requested by the local board of education if the reduced acreage is considered appropriate and can accommodate all facility, parking, and outdoor areas as documented by an architectural plat locating all needed areas on the plat.

Site A is 50 acres. Site B is 10 acres. Site C is 5 acres.



#### **GROUP EXERCISE 2**

Old School, New School, This Place, That Place: An Introduction to Utilizing the EPA School Siting Guidelines

	Site A	Site B	Site C
General description	Facility would include a state-of-the-art theater that could be used for community productions.	One-story administrative building, located in a former industrial area. The current owner, a pesticide company, will donate it and the surrounding land.	The existing school (c. 1927) sits on a small lot downtown and is surrounded on three sides by houses and a former gas station & drycleaners on the fourth. Demolition of the original building is not an option.
Size	50 acres to be donated by a developer with an approved new housing development	The entire lot is 10 acres in size but sits across from Henley Park, a 15-acre recreational park owned by the city but rarely used.	To build a new wing and ball fields, the district would need to either acquire 8 neighboring houses that were also built in the 1920s or purchase and reuse the former brownfields site. Either option creates a 13 acre site.
Construction cost	\$30 million	Renovation: \$16 M Abatement of hazards: \$10 M Total construction costs = \$26 M	\$35 million includes renovation of existing school, demo & abatement of hazards, plus construction of new wing and ball field
Roads/Parking	A road to the school would need to be constructed, along with a new highway exit. The city is reluctant to fund this construction and noted that the comprehensive plan does not support a school here.	The site could easily accommodate parking for teachers and 5 visitors.	Parking would remain limited and visitors would still have to park several blocks away.
Public water and sewer	None. The developer is waiting to finalize his subdivision plans until after extension of public water and sewer for the school.	Readily available	Readily available
Adjacent land uses	No zoning is in place to prohibit a concentrated animal feeding operation (CAFO) on the neighboring farm.	Renovation of this building could spur revitalization of the central business district which is within walking distance.	The directors of the downtown library and local YMCA are reluctant to share any space.
Walkability	Currently no students could walk or bike to the location. No sidewalks are planned (or required) for the housing development	Approximately 50 kids (within 1 mile) could walk or bike to this location on sidewalks that need to be repaired. Also more safe crossings are needed.	Approximately 75 kids (within 1 mile) walk or bike to this school along tree-lined sidewalks.
Annual bus transportation costs	Bus transportation costs for the district and for the state would increase by approximately 40%.	Bus transportation costs for the district would not vary greatly from current cost of \$100,000.	Bus transportation costs would not change.
Demographics	While the ethnic make-up of the student population wouldn't change, the lowest income students would have to travel about 30 minutes more each way each day.	The nearest neighborhood is 5 blocks away and has the lowest income levels in the city.	Approximately 75% of the neighborhood population is Latino and African-American. Income levels are low and about 50% of the children receive Free & Reduced Lunch.

Adapted from an exercise developed by the National Trust for Historic Preservation

# USING THE GUIDELINES

IDEAS FROM GEORGIA CONSERVANCY WORKSHOPS

# Billings, Montana

One four-hour workshop held to address:

- Value of communitycentered schools
- School Siting Guidelines, contents and tools
- Prioritize site evaluation categories
- Address post-decision considerations
- Considerations for the next siting process

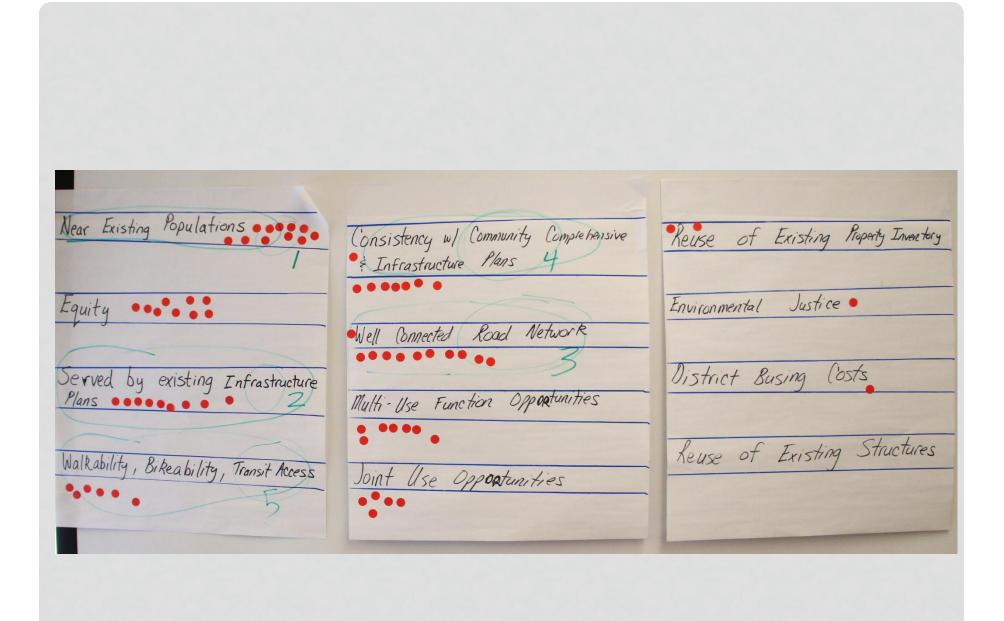


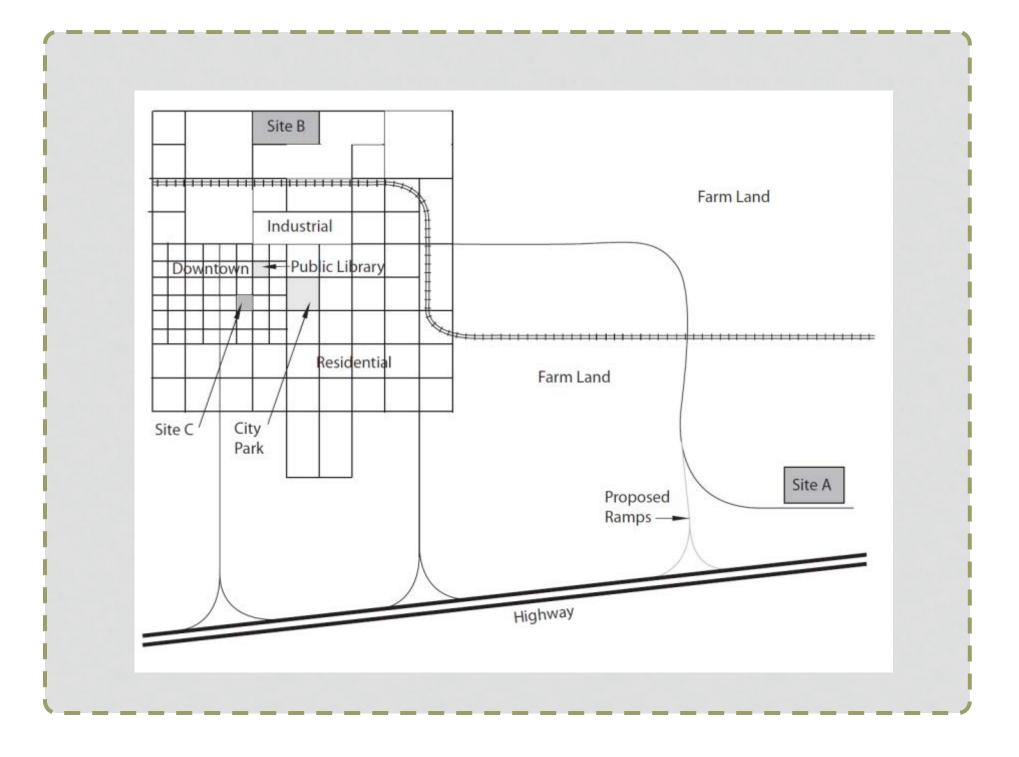








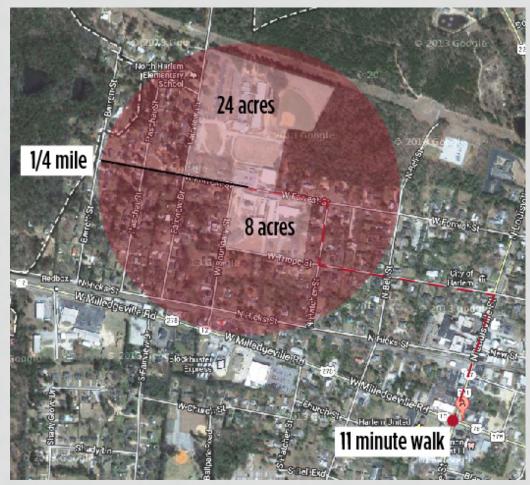




## Harlem, Georgia

Introduction to School Siting workshop with Mayor, Regional Commission, other stakeholders

Two-hour workshop during DCA retreat









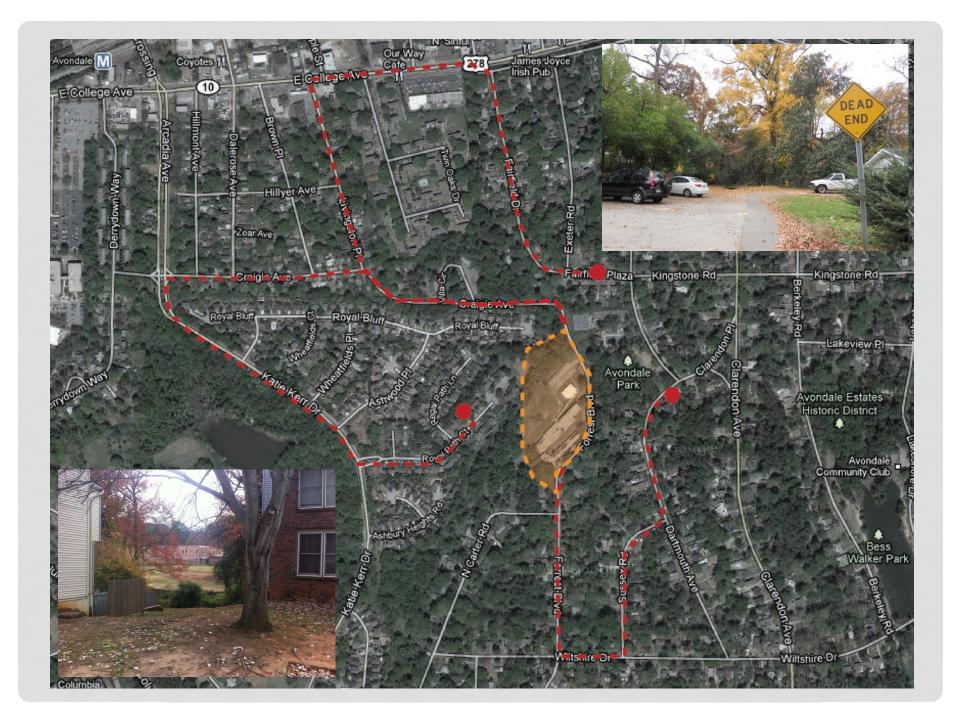
## Museum School of Avondale Estates, Atlanta

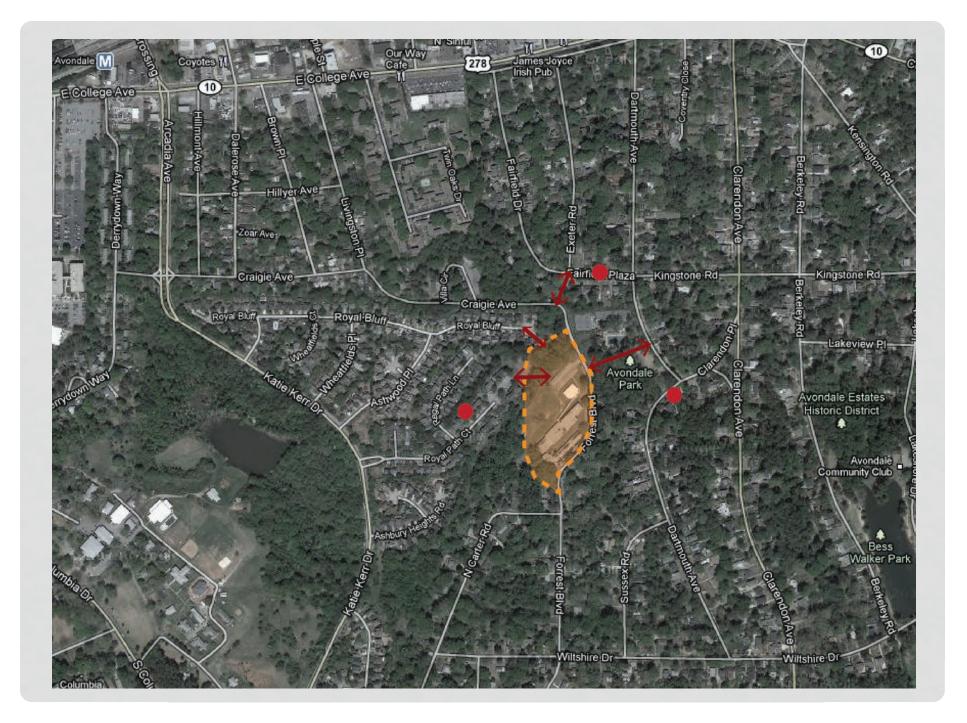
One workshop held to address:

- Site conditions and connections
- Transportation and traffic considerations
- Facility evaluation and possibilities
- Air quality concerns
- Community engagement
- Partnerships









Re-establish Exeter Road: multiuse trail or vehicular

Multiuse trail to road or campus

Multiuse trail

Foot trail through park

Imagery Date: 4/8/2010 😕 1993

33°46'13.01" N 84°16'14.57" W elev 993 ft

2011 Google

Eye alt 2368 ft

Google.





Stormwater solutions

## **QUESTIONS?**



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www.epa.gov/schools/siting



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www.georgiaconservancy.org/schoolsiting

## ADDENDUM