



**MOVING BEYOND**  
**THE AUTOMOBILE**

## Film Guide for Educators

Introduction



## About the Film Series

The recent BP oil spill, one of the largest environmental catastrophes in American history, reminds us that we must reduce our demand for and use of automobiles. A landscape with fewer privately-owned motor vehicles decreases our dependence on oil, makes our air cleaner, reduces carbon emissions, keeps streets safer, promotes exercise, saves money, and supports innovation in other modes of transportation.

*Moving Beyond the Automobile* is a series that conveys concrete, systemic ways to decrease automobile use while simultaneously building more livable communities. Composed of ten short videos, the series shares best practices to mitigate car traffic in a clear and accessible package.

Each video explores one strategy to reduce traffic, voiced through interviews with experts and featuring footage illustrating the topic. The series highlights the following best practices:

1. Transit Oriented Development (TOD)
2. Bus Rapid Transit (BRT)
3. Bicycling
4. Carsharing
5. Highway Removal
6. Road Diet
7. Proper Parking Pricing Policy
8. Congestion Pricing
9. Traffic Calming
10. Parking Reform

## About Streetfilms

*Moving Beyond the Automobile* is a project of Streetfilms. Streetfilms produces videos that show how cities around the world are reclaiming their roadways for pedestrians, cyclists and transit riders.

Streetfilms produces films that are concise, informative, creative, enlightening, and entertaining. Our goal is to translate complicated transportation concepts to make them accessible through films that reframe complex ideas about urban mobility through educational and inspiring content that is easy to understand. We focus on the positive, showing best practices in cities that are implementing innovative transportation policies. We believe that this information is vital to the future of our cities.

Our videos, available at [Streetfilms.org](http://Streetfilms.org), have been viewed more than 3.5 million times, and have been used to support advocacy projects in communities. The website hosts nearly 400 Streetfilms, and specific videos have been used to promote sustainable transportation in dozens of countries, across the U.S. in over forty states, at thirty transportation agencies, and on hundreds of blogs.

We hope to expose more people to Streetfilms and for these videos to support advocacy work. Students of all ages can easily learn the concepts laid out in these films and in turn become teachers and leaders for positive change in their own communities.

## How to Use this Film Guide

The *Moving Beyond the Automobile* series and the accompanying guide can open up conversations about transportation planning and policy in your classroom, to help your students feel enabled to participate in political and design processes that improve their city. It can be used to introduce a number of interdisciplinary topics to your students. Courses that could integrate this series into the classroom include government, history, environmental science, English, economics, and geography.

This guide has the potential to serve a broad audience. The guide's target audience is high school classrooms, but the activities can be reworked to suit a college-level audience or middle-school viewers. It can also be adapted to after-school education and a range of non-traditional academic settings. If you are organizing a community screening of the film series for adults, you could also find a number of relevant activities before or after the showing.

The films are organized according to the following four themes: "Sustainable Transportation," "Designing for Safety," "Changing the Landscape," and "Engaging in Policy." Two to three films are grouped under each theme. The films are grouped into themes as follows:

### SUSTAINABLE TRANSPORTATION:

- Bus Rapid Transit
- Carsharing
- Bicycling

### DESIGNING FOR SAFETY:

- Traffic Calming
- Road Diet

### CHANGING THE LANDSCAPE:

- Highway Removal
- Parking Reform
- Transit Oriented Development

### ENGAGING IN POLICY:

- Congestion Pricing
- Parking Pricing

These four themes are organized sequentially, but you can rearrange their order for your needs, or if you have time constraints choose to focus on certain themes. Each of the four sets of activities includes the following sections:

- **Key Concepts:** "big ideas" that introduce the general issues that will be illustrated by the films. Educators can choose to share these concepts with students or pose them to their classes as essential questions.
- **Pre-screening Activities:** ice-breakers intended to pique interest that do not require previous knowledge of the topics in the film to participate.
- **Film Synopses and Discussion Questions:** a short description of each film followed by questions that are intended to help students clarify the material in the content in the films, and others to help them critically examine the material in the films. Concluding question sets tie the films in each theme together. Students are encouraged to think independently and propose their own strategies for transportation reform.

# MOVING BEYOND THE AUTOMOBILE

- **Post-screening Activities:** encourage students to reflect upon what they have learned from watching the films, conduct further research, and develop a creative advocacy projects.
- **Further Resources:** documents in various media formats (films, websites, books, reports, etc.) that can be helpful for more in-depth research on the subjects presented in the films.

Lesson plans are modular rather than time-based, so you can select pre- and post-screening activities based on the time you can devote to this subject, or those that you feel are most useful to your class.

The goals of this film guide are to:

1. Encourage students to think critically about issues related to planning and policy;
2. Make connections between the content in the films and their daily lives;
3. Engage in a public conversation about the built environment, sharing the changes they would like to see with their community, local officials, and a broader public.

## National Education Standards

The films and accompanying guide adhere to national literacy standards to use twenty-first century media, develop vocabulary, conduct research, and synthesize complex information into verbal and written analyses and arguments. They specifically meet the following Common Core State Standards in literacy (for detailed information on each standard, please visit [www.corestandards.org/the-standards](http://www.corestandards.org/the-standards)):

## COLLEGE AND CAREER READINESS ANCHOR STANDARDS

Reading: 1; 4; 7

Writing: 1; 4; 7; 8

Speaking and Listening: 2; 4; 5

Language: 4; 5; 6

## GRADES 9-12 ELA

Reading Informational Text: 1; 2; 3; 4; 7; 8

Writing: 1; 4; 7; 8

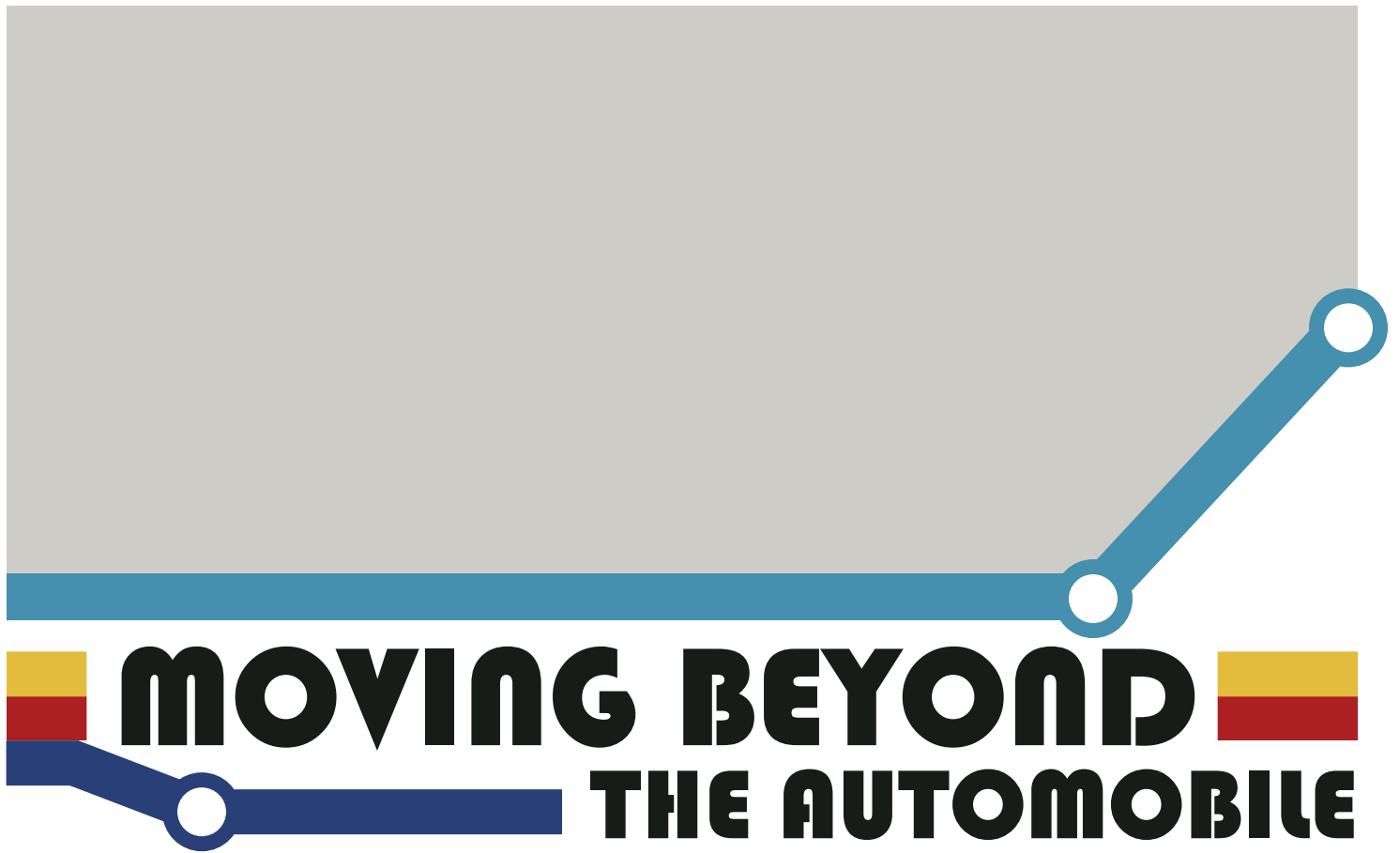
Speaking and Listening: 1; 2; 3; 4; 5; 6

Language: 4; 5; 6

## GRADES 9-12 LITERACY IN HISTORY/ SOCIAL STUDIES, SCIENCE & TECHNICAL SUBJECTS

History/Social Studies: 1; 2; 4; 5; 7; 8; 9

Science & Technical Subjects: 1; 2; 4; 5; 8; 9



# Film Guide for Educators

Sustainable Transportation



# Sustainable Transportation

## Key Concepts

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### Transportation and Carbon Footprint

Carbon footprint is a “measure of the impact human activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide.” In other words, carbon footprint is how much pollution we put in the air from our behavior. How we are able to get around makes a big difference when it comes to carbon footprint. In some areas, CO<sub>2</sub> emissions from motor vehicles can make up almost 50 percent of the carbon dioxide in the air. Sustainable commuting makes a difference!

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### Building Sustainable Bus Systems

Transportation systems that allow people to get around without an automobile have a big impact when it comes to pollution and air quality, especially in urban and suburban areas. But transit expansion projects can take decades, and they are very expensive. Bus Rapid Transit (BRT) is a way to improve public transportation that is relatively inexpensive and quick to implement, providing people with an affordable, quick, and sustainable transit option.

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### The Importance of Sharing a Ride

In cases where public transportation is not available and where distance or safety precludes walking or biking, sharing a ride can be the best option for a more sustainable commute. In addition to the ideas that are shared in this film (which focuses primarily on carsharing programs) you may want to also talk as a class about carpooling or combining car trips. We can make informed, wise decisions about when, where, and how we use privately-owned vehicles to get from place to place, and support businesses and programs that make it easier for people to make sustainable choices.



### *Films in this Lesson*

- ✓ Bus Rapid Transit
- ✓ Carsharing
- ✓ Bicycling

### *Included Worksheets*

- ✓ Average Vehicle Occupancy
- ✓ The Carbon Footprint of a Commute
- ✓ Outdoor Carbon Dioxide Readings

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## Bicycling as Carbon Neutral/Healthy Living

Many cities are seeing a resurgence of bicycling. Not only are cities redesigning their streetscapes to include bike infrastructure, they are also creating inventive ways to encourage cycling for people who do not own bicycles. Bike share programs are popping up in strategic parts of the country from Denver to Washington DC. Cycling is a fast, “green,” inexpensive, and healthy way to get around, making it a great option for many people.

### PRE-SCREENING ACTIVITIES: Putting it in Context

Before you watch the films, here are some activities to create context for your students.

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## Commuting and You

Discuss how we get to and from school every day and what factors influence our commuting decisions. Questions to include:

- What are the factors that influence how you decide to commute (money, health, time, safety, environmental sustainability, and others)?
- Do you think that environmental sustainability is something to prioritize when commuting from place to place? Why or why not?
- What are the pros and cons of your current commute? Are there realistic options that you can explore that would allow you to choose a more sustainable means of transportation?
- Is your area built in any way for safe bicycling? Do you feel comfortable walking?

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## Average Vehicle Occupancy

**Activity:** “Observing Neighborhood Driving”

**Worksheet:** Average Vehicle Occupancy

Through this activity, the students will learn about carpooling/ridesharing, and through their own observations, determine if people are carpooling near the school.

- Have a group discussion about carpooling. Students can first discuss the pros and cons with a partner before speaking with the whole class. Ask the students to explain carpooling (also known as ridesharing). What are drawbacks of sharing a ride? What are the benefits? How does it cut down on pollution from vehicles? Do we think people are carpooling in our neighborhood? Why or why not?
- Assign partners and explain that they will be calculating Average Vehicle Occupancy (AVO) to find out if people are carpooling in the area. Explain to them that they will need to stand with a clear view of the street (but always stay on the sidewalk!) and work together to carefully count how many people are in 30 cars that pass by.
- Hand out the “AVO” recording worksheet. Make sure the students understand that they will need to fill out the type of vehicle that passed by and the number of occupants in each vehicle. Review some examples of types of vehicles (SUV, hybrid, truck, car, etc.)
- Once outside, partners stand on a sidewalk with a good view of the street. Ask partners to do their best to record how many occupants are in each of the next 30 vehicles that go by. If they can’t see in a car that goes by (because of tinted windows or a high speed) they can let that car pass and count the people in the next car. For example: “car, one person,” or “SUV, four people.”



- Partners should add up the total number of people counted in the vehicles, and divide that number by the total number of vehicles (30 vehicles). Students find their own average. If you have time to find the class average, you can add up each average and divide by the total number of teams.
- Discuss the numbers you collected. What does this information say about how our city is doing when it comes to carpooling? If we did this exercise at another time of day, do you think we would get different results? Were you surprised or disappointed with our results? Why do you think most people in the area do or don't carpool? Can you think of any ways to encourage carpooling? Would we need changes to government policy? What about changes to street design (for example, high occupancy vehicle lanes on highways)? Or new and better business models?

## Film Synopses and Discussion Questions

Each of the forms of transportation illustrated in these films (bus rapid transit, cycling, and carsharing) have potential as an alternative to a privately-owned vehicle used by an individual or family. These are also considerably more sustainable ways of getting around. Each has different benefits and drawbacks, which after watching all three, could be discussed as a class.

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### Bus Rapid Transit (BRT)

**SYNOPSIS:** BRT provides faster, more reliable bus service, and has the potential to meet more remote locations in a city. Exclusive lanes for bus-only use,

special waiting stations up on a platform with advance payment, and buses are given priority at intersections.

- What are the critical components that distinguish Bus Rapid Transit (BRT) from regular bus service?
- Where are the best Bus Rapid Transit Systems in the world?
- What are the benefits of Bus Rapid Transit?
- How is BRT less expensive than building other forms of public transit, like a subway, for example?
- Why is it important to improve bus ridership?
- What are some of the problems with buses in your community?
- What changes do you think would make bus riding more popular? Would BRT be a good option?

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### Carsharing

**SYNOPSIS:** Carsharing reduces the number of car trips an individual takes, and allows people to avoid buying a car. It also encourages transit ridership, walking, and biking, except at times when a car is necessary.

- What are the personal benefits of carsharing or ridesharing?
- What are the shared benefits of carsharing or ridesharing?
- How has carsharing been incorporated into public transportation systems?
- How do cities support car sharing?

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## Bicycling

**SYNOPSIS:** Many trips people take each day are within reasonable biking or walking distance. Investing in cycling infrastructure by cities is necessary to help reduce traffic congestion and pollution, as well as provide an affordable form of transportation and exercise.

- How is a cycling network a crucial component of a sustainable transportation system?
- Why is street design essential to making cycling more popular?
- Since New York City is expected to have one million more residents by 2030, how is cycling a better option than adding more infrastructure for cars?
- What are some of the benefits of cycling?

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## Concluding Questions

- How does each of these films convey a sustainable way of getting around our cities and towns?

- Do you think one of these choices would work better for your community than others? Which one and why?
- Could these methods of getting around be used in conjunction with each other? For example, do you think people would bike to a BRT station?

## POST-SCREENING ACTIVITIES:

### Making the Connection

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#### How does transportation relate to Carbon Footprint?

**Activity:** “Human Graphs”

**Worksheet:** The Carbon Footprint of a Commute

- Hand out the “Carbon Footprint of a Commute” worksheet. Ask the students to compare the carbon output numbers and discuss if they are surprised by any of the comparisons.
- Be sure to go over what an SUV is (Sports Utility Vehicle) and what a hybrid car is, and have the class list some examples of each. Be sure to have some strong and clear definitions before moving on to making the graphs.
- Put the large printed icons down on the floor or ground. Explain that we will be graphing the footprint of Maria, a hypothetical resident who lives in the area near the school and commutes 5 miles each morning to her job (10 miles total per day).

- Have the students find the numbers on the handout and recreate them using their bodies by standing in lines, each person representing a pound of carbon. The first comparison you might want to try is walk/bike vs. SUV. (There will be 16 students in a line above the SUV icon and no one above the bike/walk icon, a dramatic difference).

### Activity: Bar Graph Maria's Commute

To further understand the differences between modes of transportation and carbon output, have the students make bar graphs, and answer the accompanying questions using the graphing sheet provided on the second page of the worksheet. Each student should refer to the numbers for a 10-mile commute listed on the first page of the worksheet.

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## The 350 Campaign

### Activity: CO<sub>2</sub> and Parts Per Million levels

#### Worksheet: Outdoor Carbon Dioxide Readings

- Explain that we measure CO<sub>2</sub> in Parts Per Million (PPM) and that scientists have documented that these levels are rising in the atmosphere rapidly. Review that this is because we burn fossil fuels, and a major way we burn those fuels is by driving cars and trucks.
- Read the "Outdoor Carbon Dioxide Readings" handout as a class. Look at the various numbers and compare them.
- Focus on 389 (the world average today), 400 (high but typical in high traffic areas) and 450 (if the world average reaches this level, we will face very difficult environmental challenges). The key thing to learn from this handout is that the level of carbon dioxide in the atmosphere is going up.

- Let the students know that scientists are recommending we bring our CO<sub>2</sub> levels down to 350 PPM, which is now considered a relatively low reading.
- Now that students have a firm grasp on PPM readings, explain to the students that there is a movement to reduce carbon emissions to the point where the world average will read as 350 PPM instead of the 389 levels we have now.
- Show the students the Streetfilm titled "San Francisco: 350 Climate Action" at [www.streetfilms.org/san-francisco-350-climate-action/](http://www.streetfilms.org/san-francisco-350-climate-action/) (running time 3:23). Then have them visit the site [350.org](http://350.org).
- After you view this film and website ask students the following questions:
- How is transportation discussed by the 350 movement?
- Do you think it is possible for us to achieve the goals of the 350 movement? Why or why not?
- What are the pros and cons of each alternative form of transportation (walking, biking, bus, train)?

## Further Resources

- 350.org: [www.350.org](http://www.350.org)
- 1Sky: [www.1sky.org/](http://www.1sky.org/)
- The No Impact Project, including film, book, and curriculum: [www.noimpactproject.org/](http://www.noimpactproject.org/)
- "Bike vs Car vs Transit." <http://www.streetfilms.org/bike-vs-car-vs-transit/>

# WORKSHEETS

# Average Vehicle Occupancy (AVO)

For each vehicle that drives by, write the type of vehicle (car, SUV, van, truck, taxi) and number of occupants.

Vehicle Type	Number of People
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Vehicle Type	Number of People
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Notes:

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## Calculate the AVO:

- Find the AVO by dividing the total number of people in the cars by the total number of cars.
- The higher the AVO, the better your community is doing at carpooling.

Your Block's AVO: \_\_\_\_\_

# The Carbon Footprint of a Commute

Let's say Maria lives in the neighborhood near your school and 5 miles from her job. That means her total commute is 10 miles per day.

## If she:

**rode in an SUV**, her 10-mile commute would generate 16 pounds of carbon dioxide.

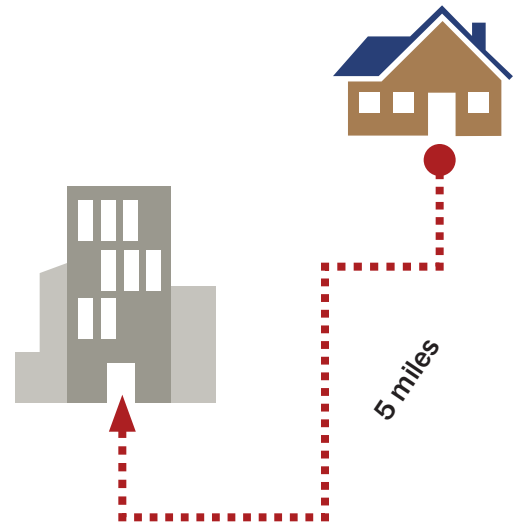
**rode in an average car**, her drive would release 12 pounds of carbon dioxide.

**rode in a hybrid car**, this commute would emit 4 pounds of carbon dioxide each day.

**took the bus**, she would create 5 pounds of carbon dioxide.

**rode the train or subway** she would put 2.5 pounds of carbon dioxide into the atmosphere.

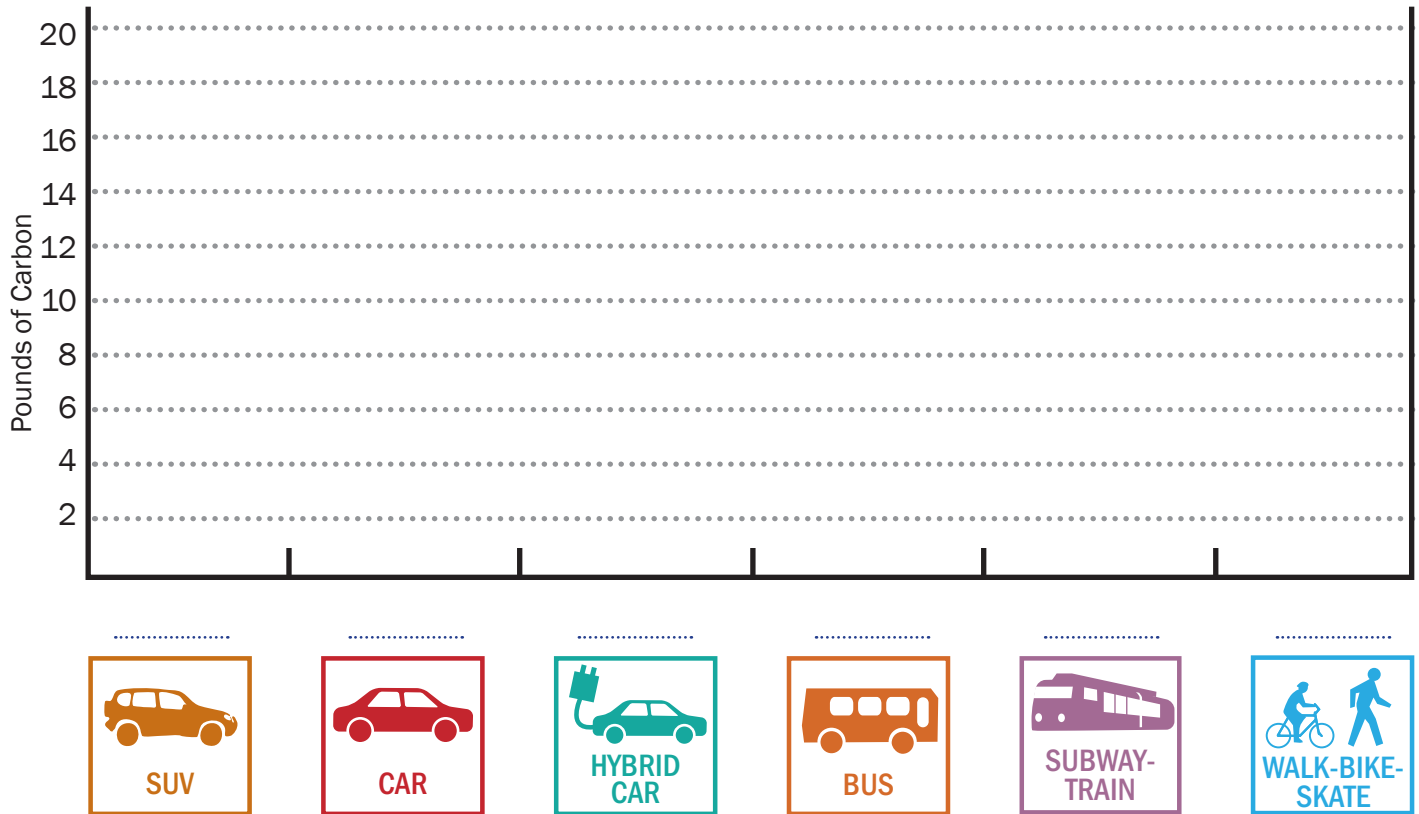
**walked, biked, or skated**, Maria's commute would create no carbon dioxide beyond her normal respiratory output.



How many trees would Maria have to plant each year to offset the carbon output of her commute?

Mode of Transit	Number of Trees
SUV	23 trees
CAR	16 trees
HYBRID CAR	6 trees
BUS	8 trees
TRAIN	2 or 3 trees
WALK/BIKE/SKATE	0 trees

## Graph the Carbon Footprint of a 10-mile Commute



Are there any practical changes you think your town or city could make so Maria could be convinced to commute in the most sustainable way?

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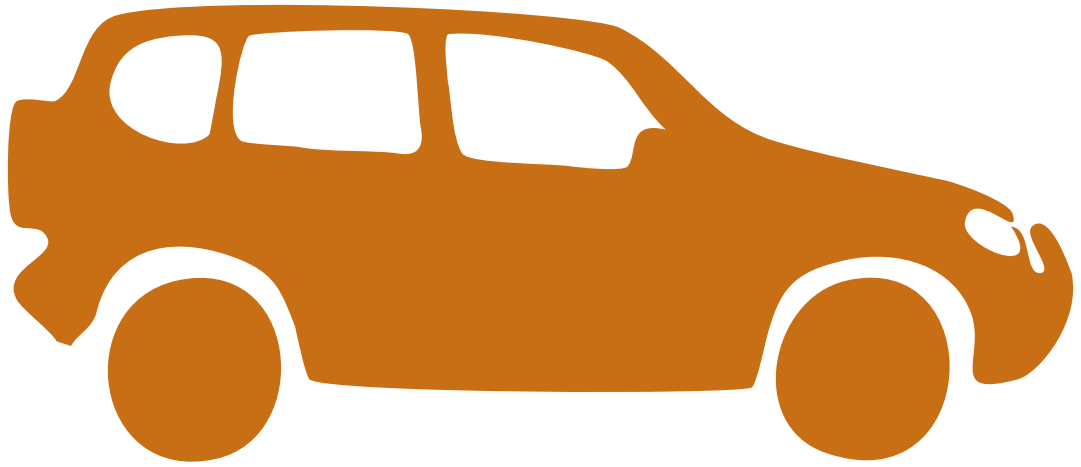
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**SUV**





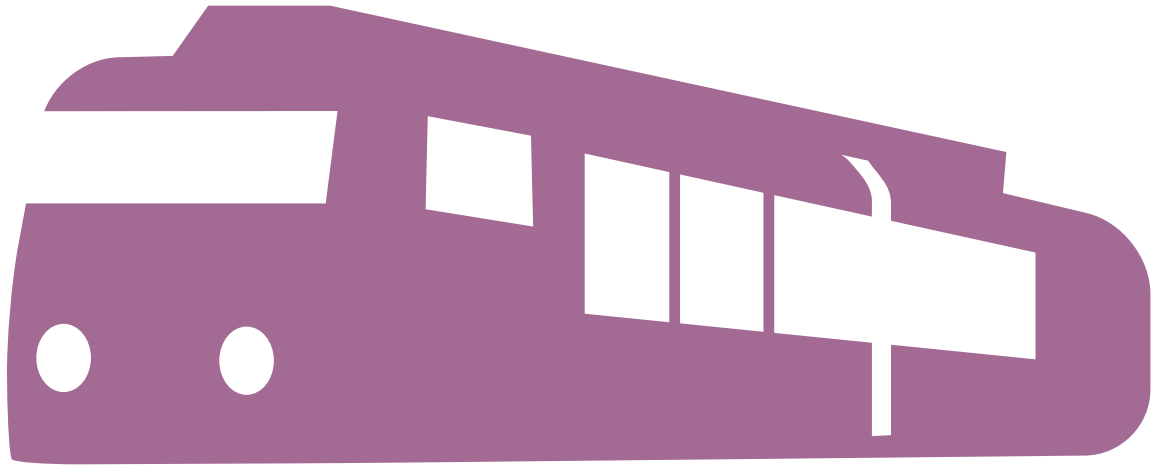
**CAR**



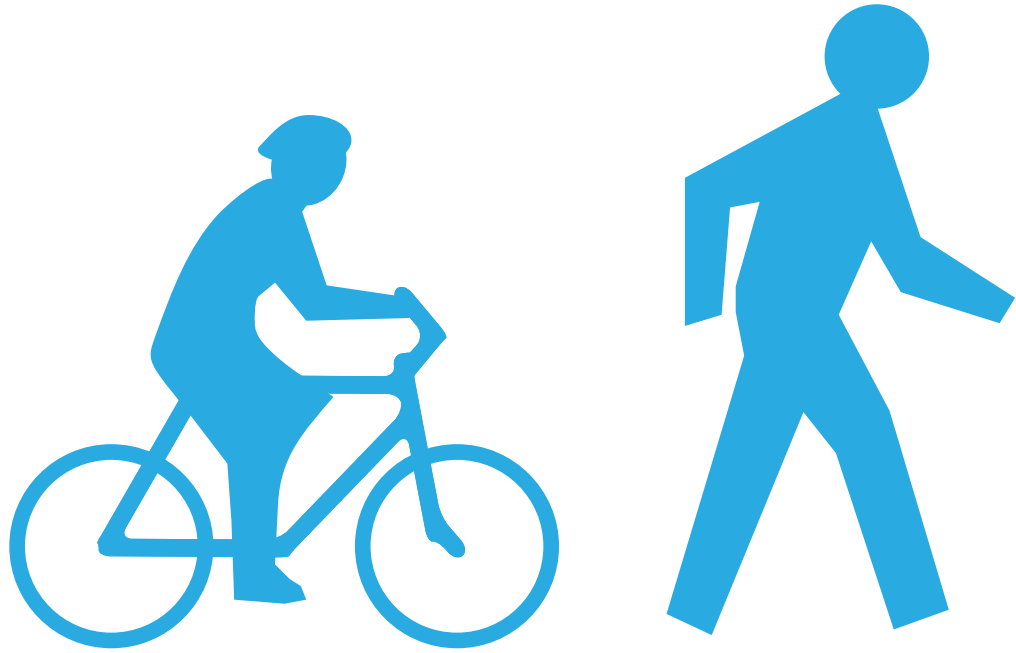
**HYBRID  
CAR**



**BUS**



**SUBWAY/  
TRAIN**



**WALK-BIKE-  
SKATE**

## Outdoor Carbon Dioxide Readings

### 280 ppm

Average CO<sub>2</sub> reading until around 1850

### 350 ppm

A very low reading for today's standards

### 389 ppm

Average worldwide outdoor reading today

### 400 ppm

Outdoor readings in areas with high traffic or industrial activity

### 450 ppm

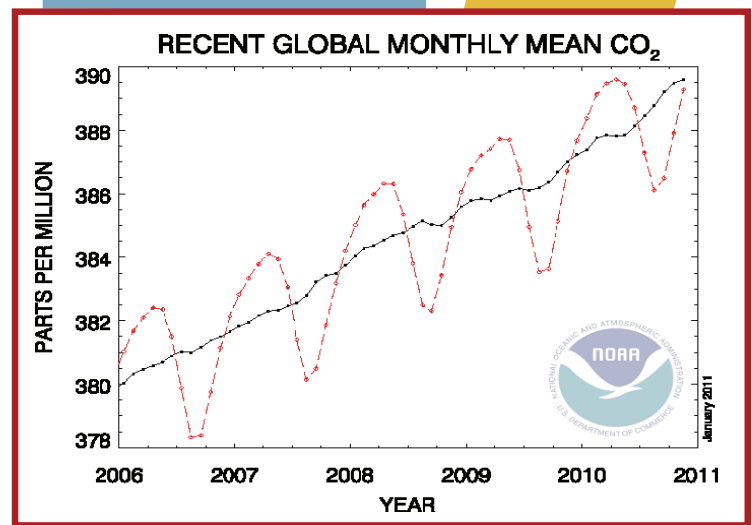
If CO<sub>2</sub> reaches and remains at this level worldwide, it is likely that climate change will be more extreme

### 1000 ppm

Predicted possible concentration of outdoor CO<sub>2</sub> in a century if we continue with our current habits

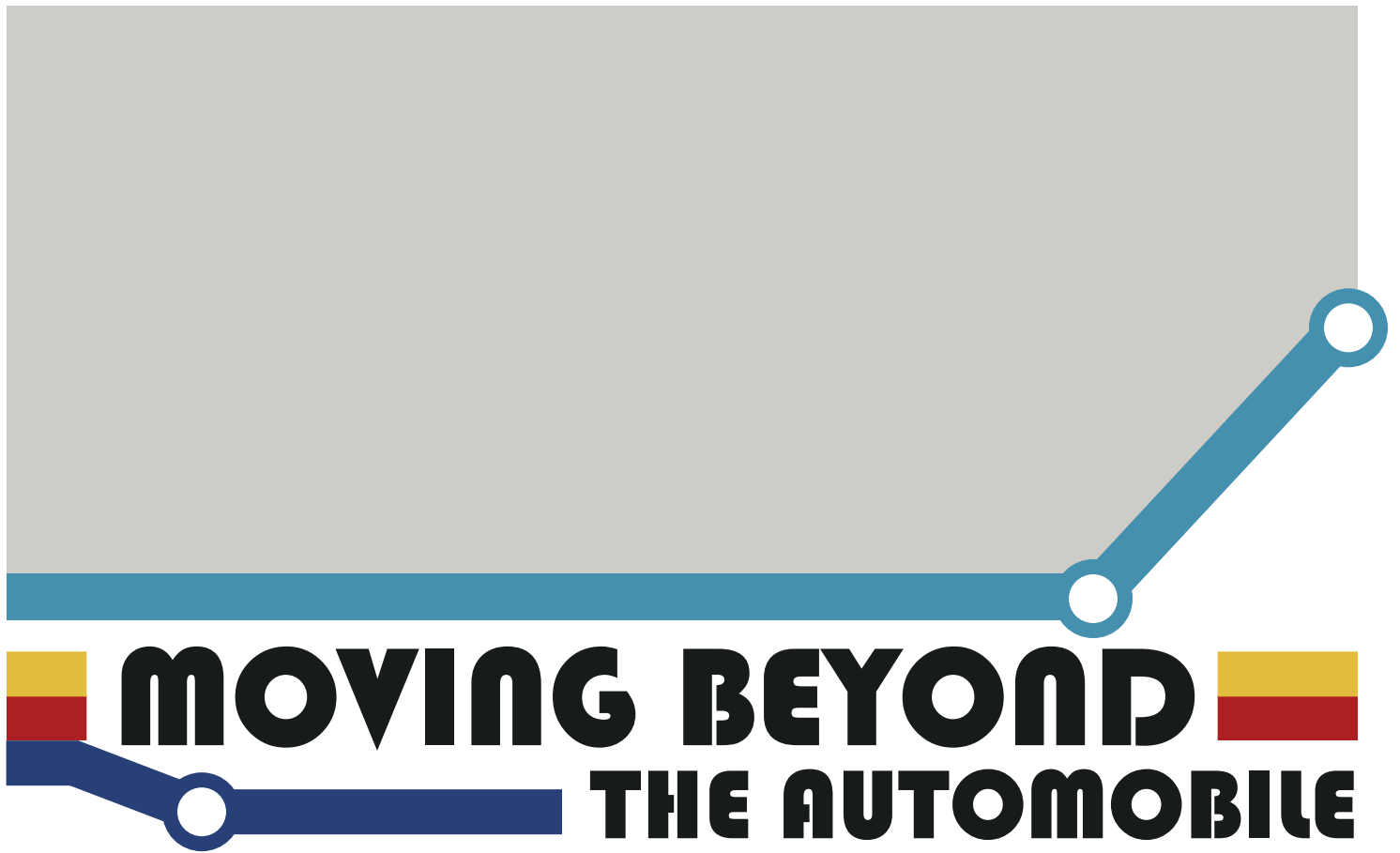
All carbon dioxide air readings are taken in Parts Per Million (PPM)

On average, we see an increase of at least 2 PPM per year



1. Scientists say that 350 parts per million of CO<sub>2</sub> in the atmosphere is the safe limit for humanity. Do you think that is a goal we can achieve? Why or why not?

2. Do you have any suggestions for ways cities could make transportation more sustainable?



**MOVING BEYOND**  
**THE AUTOMOBILE**

## Film Guide for Educators

*Designing for Safety*





## Designing For Safety

### Key Concepts

#### Speeding While Driving

Speeding is the number one cause of injuries and deaths from driving. The main reasons are because speeding drivers have less time to react to avoid collisions, and tend not to yield the right-of-way. Speeding has serious consequences when a pedestrian is involved. At higher speeds, drivers are less likely to see a person walking, and are even less likely to be able to stop in time to avoid hitting one. According to a UK Department of Transportation report, “Killing Speed and Saving Lives” a pedestrian hit at 40 mph has an 85% chance of being killed, at 30 mph, a 45% chance of being killed, and at 20 mph, the likelihood drops down to 5%.

#### Speed Limits In The City

Pedestrian crashes occur most frequently in urban areas. The National Safety Council estimates that 86% of all non-fatal pedestrian crashes in the United States occur in urban areas and 14% occur in rural areas. Seventy-two percent of all pedestrian fatalities in 2003 occurred in urban areas. Properly enforced speed limits can make cities considerably safer for pedestrians.

#### Road diets redesign streets for safety

Streets are a significant proportion of our public space. For example, in New York City, streets and sidewalks make up 80% of New York’s public space. Yet, because such a large proportion of that public space is devoted to privately-owned vehicles, pedestrians and cyclists often resort to competing over the space that is left, and are less safe as a result (for example, if streets are unsafe for cyclists, they are much more likely to ride on sidewalks and injure pedestrians). A road diet has



the potential to “slim down” the extra spaces that are unnecessarily devoted to cars, in exchange creating wider sidewalks, medians, public plazas, and bike lanes, which make pedestrians and cyclists safer and more comfortable on the street.

## PRE-SCREENING ACTIVITIES: Putting it in Context

Before you watch the films, here are some discussion strategies to provide context for your students.

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### Speeding and You

Discuss speeding and the factors that influence why people speed. Distribute the “When Cars Speed...” handout and have students fill out the chart based on the bar graph. Then have a conversation about speeding. Questions to include:

- What are the factors that influence why we might speed?
- Is speeding a problem in the area around our school? Is it an issue in the neighborhood where you live? Are there certain streets and intersections where speeding is worse? Why?
- Whose responsibility is it to slow down speeding cars: drivers, police officer, urban planners, or someone else?

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### Weigh in Your Opinion

Explain to the students that you are doing a “human barometer” activity and need to clear away desks and stand up. You will read each statement to the class and then students need to pick a side of the room. Establish a corner for AGREE, one for DISAGREE and a point in the center for MIXED.

We have provided you with suggested questions. We recommend that you select three from this list in order to build in enough time for a full class conversation

about the issue. Please do not read all of the questions listed below to your students unless you can build extra time into your class session. After each question, have students choose whether they AGREE, DISAGREE, or are in the middle, in which case they go to MIXED. They should walk towards the side of the class with which they most identify. Please select from the following questions:

- When it comes to safe street design and access to affordable transportation, some neighborhoods are treated better than others.
- The dangers of bicycling far outweigh the health benefits.
- People need to own a car in my community in order to get around.
- It is the responsibility of traffic engineers to reduce the number of speeding cars and crashes.
- There are issues in my community that are much more important than car crashes.

You should then facilitate a discussion about why students chose to stand where they did. We know that a conversation about these questions could get heated - make sure to clarify the ground rules for a discussion and students feel they can comfortably voice their opinion.

Once the students have had a conversation about each question, have a wrap up discussion for a few minutes.

## Film Synopses and Discussion Questions

The following films deal with safety and streets designed to slow car speeds and allocate space away from automobile traffic.

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### Traffic Calming

Explores the various strategies employed and infrastructure built by cities to reduce car traffic and improve the overall health, safety, and environmental impact of a transportation network. Case Study: Hoboken.

- What are some of the strategies used by urban planners to address reckless driver behavior? What about speeding in particular?
- What kinds of infrastructure can slow speeding cars?
- How does traffic calming improve the health, safety, and environmental impact of a transportation network?
- How has Hoboken implemented traffic calming measures?
- Do you think your community needs traffic calming? Why or why not?

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### Road Diet

Examines the process of allocating road space away from automobile traffic to accommodate more sustainable modes of transportation such as BRT, bicycle infrastructure and pedestrian plazas. Taking away car traffic also creates safer streets. Case Study: San Francisco.

- What do proponents say are the benefits of a road diet?
- How does taking lanes of traffic away from cars make pedestrians and cyclists safer?
- Given that road space is limited, how do you think we can best accommodate plans for bicycle infrastructure and pedestrian plazas, without taking away too much space from buses, for example?
- What does the story of San Francisco teach us about the pros and cons of a road diet in that city?
- Can you think of a street in need of a road diet in your community? If yes, why that street? If no, why not?

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### Concluding Questions

- Are you convinced that speeding drivers need to slow down in the area outside of schools? Why or why not?
- Do you think that traffic calming and road diets are the most effective ways to slow speeding drivers?
- Who should be responsible for slowing down speeding car traffic?
- How would you slow down drivers?

## POST-SCREENING ACTIVITIES:

### Making the Connection

#### Is speeding a problem in my neighborhood?

**Activity:** Interviews About Speeding

**Worksheet:** When Cars Speed...

Decide as a class how you will conduct research about speeding in the area. Your students should interview adults they know and trust, such as family members, neighbors, and community leaders, about speeding near their home. We encourage students conduct interviews with the elderly, who are often most vulnerable to speeding cars and may have a useful perspective. Here are some suggested questions for interviews:

- Do you think speeding is a problem in your neighborhood? Why or why not?
- Is there a particular street you know of that has a problem with speeding cars? Why do you think speeding is a problem there?
- Do you feel like cars speed on your street?
- Who is responsible for slowing down speeding cars?
- How can we make streets safer (in all ways, not just in terms of speeding cars)?

Students should come back with the results of their interviews and compare their responses to those of their family members, peers, and neighbors. Students can also create a poll to distribute to students in the school and tally results. As part of a follow-up conversation, they can compare the qualitative and quantitative results, or differences between neighborhoods.

## Further Resources

- Summary Report: Evaluation of lane reduction “Road Diet” Measures and Their Effects on Crashes and Injuries. PDF at [www.fhwa.dot.gov](http://www.fhwa.dot.gov)
- Dan Burden and Peter Lagerwey, “Road Diets.” [www.walkable.org/assets/downloads/roaddiets.pdf](http://www.walkable.org/assets/downloads/roaddiets.pdf)
- “The New York City Pedestrian Safety Report & Action Plan,” NYC DOT. [www.nyc.gov/html/dot/html/about/pedsafetyreport.shtml](http://www.nyc.gov/html/dot/html/about/pedsafetyreport.shtml)
- Streetfilm: 20 is Plenty. <http://www.streetfilms.org/no-need-for-speed-20s-plenty-for-us/>

#### Activity: Case Study of New York City’s “That’s Why It’s 30” Campaign

**Website:** [www.nyc.gov/html/dot/html/about/knowthespeedlimit.shtml](http://www.nyc.gov/html/dot/html/about/knowthespeedlimit.shtml)

Go to the above website to learn about NYC DOT’s campaign to slow speeding drivers.

- Make sure they also read the section titled “Campaign Background” at the bottom of the page
- Ask students to view the “That’s Why it’s 30” billboard advertisement and YouTube videos made for television

Discuss this campaign as a class. Below are some suggested questions for discussion:

- Do you think this campaign is convincing?
- According to the website, the Department of Transportation found that the vast majority of New Yorkers “were unaware of New York City’s speed limit, and that nearly all of the drivers sped.” Do you think this is a problem in your community? Why or why not?
- What do you think governments should do to reduce fatalities from speeding cars?

# WORKSHEETS

# When Cars Speed...

## Car Crashes in Urban Areas

Pedestrian crashes occur most frequently in urban areas. The National Safety Council estimates that 72% percent of all pedestrian fatalities in 2003 occurred in urban areas.

## Speeding is the Main Problem

When it comes to urban traffic safety there is one major concern: speeding.

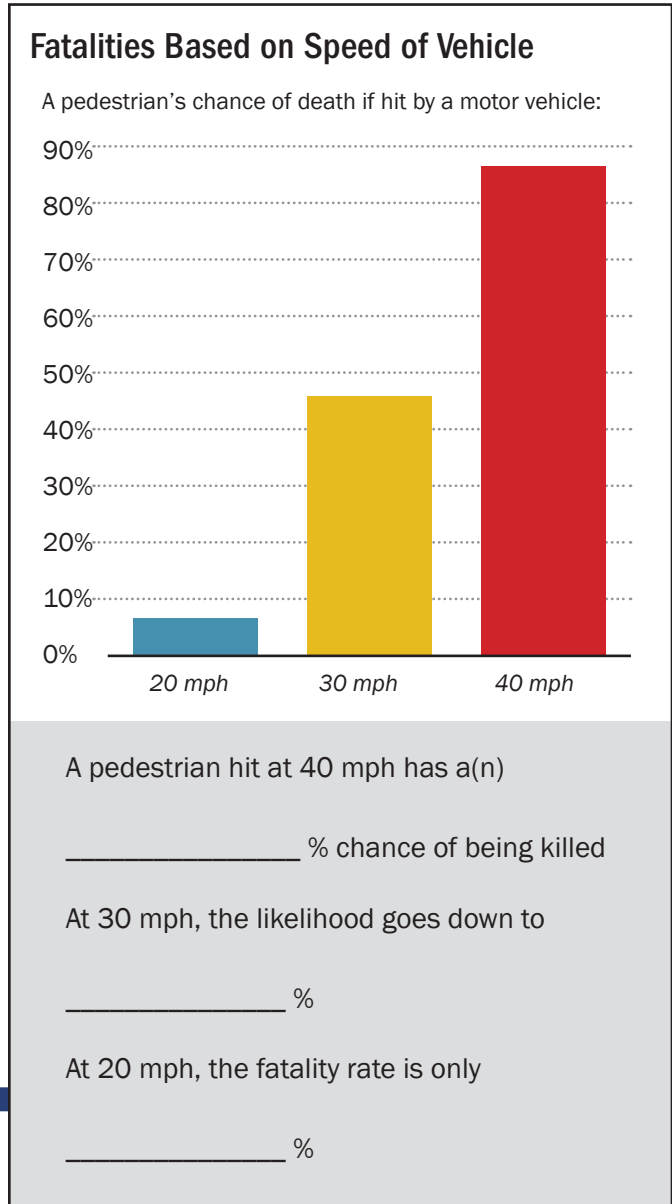
### Why? Because speeding motorists...

1. Have less time to react to avoid collisions
2. Tend not to yield the right-of-way
3. Cause more deaths and injuries

How does speeding have serious consequences when a pedestrian is involved? Write your answer below:



Using the graph, fill in the information below:



Sources:

- <http://www.transalt.org/newsroom/testimony/1862>
- <http://www.walkinginfo.org/pedsafe/crashstats.cfm>

**MOVING BEYOND**  
**THE AUTOMOBILE**

## Film Guide for Educators

Changing the Landscape





## Changing the Landscape

### Key Concepts

#### Streets Change Over Time

Streets are designed by people, and continue to be redesigned over time to accommodate future needs. American roadway infrastructure has undergone many changes throughout history. Particularly momentous changes to streets happened in the twentieth century, with the invention of the automobile at the turn of the century, and the mid-century construction of the Interstate Highway System. Today, most streets are designed for cars and trucks, but some are being redesigned to support pedestrians, cyclists, and public transit riders.

#### Highways Can Be Removed

For many reasons, highways may seem like they are not going away: they are the country's largest and most expensive infrastructure project to date, and a vast network that may seem essential to our landscape. But many cities have torn down sections of highways that run through neighborhoods, to improve air quality and repair community fabric.

#### Parking Spots Can Be Repurposed

One of the easiest and most affordable ways to redesign a street and give more space to pedestrians, cyclists, and transit riders is to get rid of parking spots for privately-owned vehicles.



#### Communities Can Be Redesigned For Transit

Communities currently designed for cars and trucks can be redesigned to better serve pedestrians, cyclists, and transit riders. Through transit-oriented development, people can get around in a way that is fast, easy, affordable, and sustainable.

## PRE-SCREENING ACTIVITIES:

### Putting the Films in Context

Before you watch the films, here are some discussion strategies and activities that will help create some context for your students.

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#### Street Design and Daily Life

Discuss how street design affects our daily lives. Questions to include:

- What does good street design look like to you?
- How does street design affect our health, safety, and daily lives?
- What can we do to improve the ways we plan our streets?

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#### Built Environment Walk

**Activity:** Observe the surrounding streets

**Worksheet:** Built Environment Walk

- Come up with a definition of the “built environment” as a class. You can clarify that it is human-made buildings and structures. These structures provide the setting for human activity, ranging in scale from personal shelter to neighborhoods to the large-scale civic surroundings.
- Explain to the students that you are going outside to observe infrastructure in the area to look at street design and hypothesize about how the built landscape could change. Distribute the “Built Environment Walk” handout. Go outside with clipboards and the handout for approximately 20 minutes.

- After the walk, come back for a discussion. We see our streets every day but usually don’t think about how we could change them. Ask whether they noticed anything new about the area around the school and if they had any ideas for improvements.

### Film Synopses and Discussion Questions

These films explore some of the ways to reshape our built landscape, with varying degrees of feasibility and cost. All three films demonstrate that our infrastructure and streets are more easily modified than we always realize.

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#### Highway Removal

Explores the process of removing highways and freeways in order to improve the overall health and quality of life of the population in the area and reconnect the neighborhoods which highways and freeways fracture. Interview: John Norquist, Case Studies: New York, San Francisco, New Orleans.

- Where do highways tend to be built when they pass through cities? Why?
- What are some of the problems caused when highways pass through neighborhoods?
- How does removing highways and freeways improve the overall health in an area?
- How does it improve quality of life for a population?
- Do you think there is a highway that runs through your city that disrupts a neighborhood? Do you think it’s possible to do anything about it?

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## Parking Reform

The process of removing curb-side and dedicated lot parking and reallocating that space to for pedestrian amenities and other transit and bicycles infrastructure. Interview: Enrique Peñalosa. Case Studies: Portland, San Francisco.

- How is parking reform easier to implement than some other street redesign projects (for example, highway removal, or transit-oriented development)
- What are some potential controversies over the removal of parking spots in a community? How might those concerns be taken into account?
- How would you reallocate the space of a parking spot? Would you use it for pedestrian amenities? Mass transit? Bicycle infrastructure? Something else?
- Do you think that the area around your school could successfully implement parking reforms? Why or why not?

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## Transit-Oriented Development (TOD)

Building sustainable communities by locating the places where people live, work, and shop near transit infrastructure. Bringing multiple forms of transportation together is key to successful TOD. Case Study: Jersey City.

- What is transit-oriented development (TOD)?
- What are some examples of transit-oriented development in the film?
- What are the benefits of transit-oriented development?

- Why do suburban areas need more rail and bus connectivity?
- Do you think that transit-oriented development could be successful in suburban locations? What about rural locations?
- How could mass transit be improved in your neighborhood, city, and/or region?

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## Concluding Questions

- How does each of these three films address a way we could redesign our streets?
- Do you think some would be easier for your community to implement than others?
- How would you change the built environment for the better?

## POST-SCREENING ACTIVITIES:

### Making the Connection

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#### How can we redesign streets for improved transit in our area?

##### Activity: Redesign Your Street

- Divide the class into teams of 3-4 students. Explain to the students that they will be making designs that use a bird's-eye view of the area around the school. Some suggested goals: improve transit, reallocate street space to pedestrians and cyclists, and mitigate the effects of nearby highways. Students should feel free to come up with their own goals too.
- Distribute copies of a Google Map satellite view of



the area around the school to each team. Students should use this satellite image as a guide for drawing and labeling a large outline map of streets, key buildings and landmarks in the neighborhood on a poster board. We recommend using 2' x 3' poster board or foam core.

- Students should place the school in the center of the poster, and brainstorm ideas for changes that improve transit, safety, health, and more. They can sketch their designs for the street in pencil.
- Once they have finished sketching the street with their new plans, they can begin to draw street-level changes with markers or colored pencils. Remind students not to focus on buildings, but the street itself.
- When groups have finished their posters, they should also create a color-coded/numbered key on a separate sheet of paper explaining the changes they decided to make to their streets. This will help people follow their ideas more carefully.
- Students should take around 10 minutes to practice presentations about what they will say about their designs. Each group should evenly divide up the content to present. Questions for them to cover in their preparation: What do they think the community currently lacks in terms of transit-oriented streets? Why did they make the changes they did? What do their designs do to improve transit and reallocate space in the area?
- Groups should present their designs to the rest of the class. You could consider scheduling a separate time for them to present to the larger community, reaching out to parents and community leaders to ask them to attend.

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## Case Study: Highway Removal in Portland, OR

### Activity: Watch a Film on Highway removal In Portland, Oregon

The Mt. Hood Freeway highway was supposed to run through Portland, OR, but instead the city brought down the Harbor Drive highway that ran along the waterfront. They never built the freeway and instead invested the money into transit-oriented development.

Watch the film online, then discuss the following questions:

- What was the Mt. Hood Freeway?
- How was the freeway defeated?
- What happened to Harbor Drive, the highway that ran along the waterfront?
- How were citizen groups critical to defeating the freeway?
- What did the city build instead?

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## Case Study: Highway Removal in New Haven, CT

**Activity:** Conduct research about Route 34 in New Haven, CT

- Explain that the class is going to conduct web research on the recent US Department of Transportation TIGER II grant that was awarded for the removal of Route 34 in downtown New Haven, CT.
- You can choose to divide up the class into teams to look into different aspects of this story.
- Explore the history of the Interstate Highway System in Connecticut, Route 34, and the current situation. Look into the ways that this space will be redeveloped. Who will the project employ? How much will it cost?
- Look at the websites of the following organizations for information: New Haven Urban Design League, Tri-State Transportation Campaign, New Haven Register, US Department of Transportation, Streetsblog, Planetizen, Congress for New Urbanism.
- Challenge your class to find aerial photographs, maps, and other primary visual evidence.
- Present your class' findings in an exhibit and invite the rest of the school to view it.

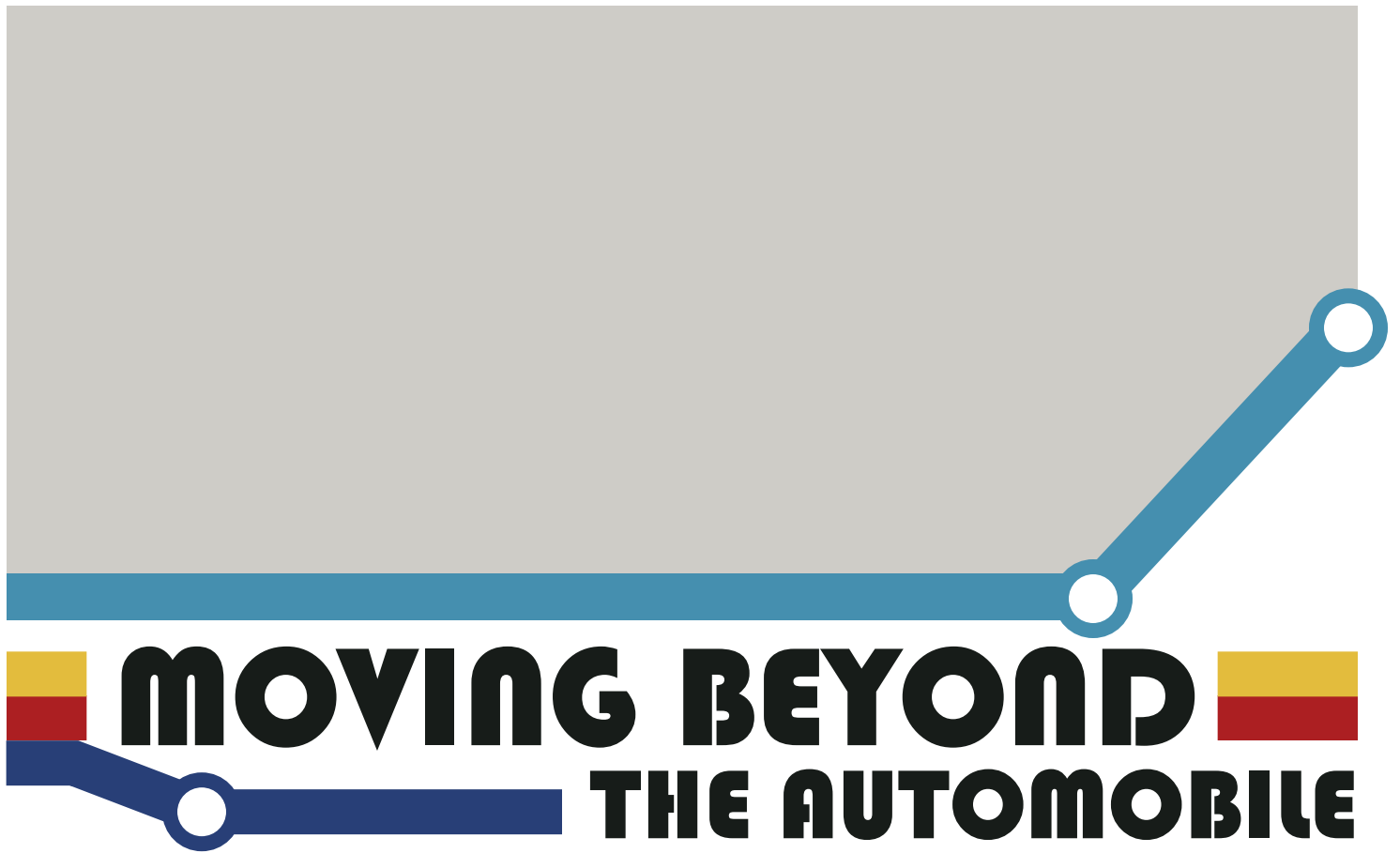
## Further Resources

- “*Making Sense of Place – Portland: Quest for the Livable City*” (DVD) A documentary film and educational outreach project that explores highway removal and transit-oriented development in Portland. Lincoln Institute and Northern Light Productions, May 2009
- “Appendix A: The Traditional Neighborhood Development Checklist” in Andres Duany, Elizabeth Platter-Zyberk, and Jeff Speck, *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. North Point Press, 2001, pp. 245-252.

# WORKSHEETS

# Built Environment Walk

Category	Observations	How could it be Improved?
<p><b>Plantings and Beautification Measures</b> <i>(tree pits, flowers, plantings, etc)</i></p>		
<p><b>For Pedestrians</b> <i>(crosswalks, signage, air quality, crossing guards, lighting)</i></p>		
<p><b>Car Traffic</b> <i>(highways in the area, noise pollution, traffic signs, speed bumps, parking spaces )</i></p>		
<p><b>Public Transportation</b> <i>(bus stops, subway entrances, how close are these to the school, and are they hybrid?)</i></p>		
<p><b>For Cyclists</b> <i>(bike lanes, bike parking, protection from car traffic)</i></p>		
<p><b>Other</b> <i>(who is able to use the streets? how could they be redesigned to benefit more people?)</i></p>		



**MOVING BEYOND**  
**THE AUTOMOBILE**

## Film Guide for Educators

*Engaging in Policy*





## Engaging in Policy

### Key Concepts

#### Policy is Crucial to Making Streets

In addition to design, government policies shape our streets. When a local, state, or national government creates and enforces policies and laws that make a certain mode of transportation easier, faster, and less expensive, these policies encourage people to make certain personal choices. Historically, we have had government policies that support individual car ownership and uses. The films in this section explore government policies that discourage the use of privately-owned vehicles.

#### Congestion Pricing

Congestion Pricing is the practice of charging drivers more to use a roadway, bridge or tunnel, to discourage the use of cars during periods of peak congestion. The goal of congestion pricing is to reduce traffic and encouraging commuters to walk, bike or take mass transit. Profits earned from charging motorists would fund maintenance and improvements to the regional mass transit system.

#### Parking Pricing Policy

Studies have proven that free parking is a major problem for city streets. Parking pricing reform will lead to a better pedestrian environment, cleaner streets and air, and safer downtown shopping districts. Here's how it works: metered parking decreases the use of long-term parking, convinces some drivers to use garages, and causes others to take public transit. As a result, people drive less, so they are not looking for parking, circling blocks with polluting vehicles and causing car crashes in neighborhoods with a lot of pedestrians.



#### Citizen Engagement: Getting Involved in Policy Making

If we want our government to make changes to improve our neighborhoods, we need to get involved.

## PRE-SCREENING ACTIVITIES: Putting it in Context

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### Discussion: Do active citizens make better cities?

Discuss why residents do or don't get involved with our local, regional and national policy-making, and how we might get more involved. Questions to include:

- Is voting important to shaping government policy? Is voting in elections enough?
- Do you think people pay attention to policies that elected and appointed officials make?
- Do you think we have any power to influence decisions made by officials? Why or why not?
- Are there ways people can get involved in making their government policies better?
- What about transportation planning? Can we get involved in issues that we have looked into through the film series?

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### Did New Yorkers Want Congestion Pricing?

- Look at the Quinnipiac University poll from August, 2007, regarding congestion pricing. <http://www.quinnipiac.edu/x1302.xml?ReleaseID=1098>.
- Briefly go over the definition of congestion pricing as a class, and explain to the students that congestion pricing failed to pass in New York City several years ago.

- 9 in 10 people said traffic was a serious problem in New York, but almost 6 in 10 did not support congestion pricing. Why might that be the case?
- What borough supported congestion pricing? Which ones opposed it? If we look at a map of New York City, why do you think it was most popular in Manhattan?
- How might complicated public opinion have affected attempts to pass congestion pricing in New York?
- A majority of New Yorkers supported the idea if politicians would use the proceeds to prevent transit-fare increases. Do you think a mistrust of politicians may be a reason why people were against congestion pricing? How could their concerns be addressed?

## Film Synopses and Discussion Questions

These two films highlight policy initiatives that local governments take to address issues related to traffic congestion in city centers. These policies deal less with traffic engineering and urban design, and more with economic and legal changes that discourage car use and incentivize transit ridership.

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### Congestion Pricing

Synopsis: Explores the system of charging drivers in periods of peak traffic to reduce congestion and invest revenue in mass transit.

- What are some reasons why city officials feel the need to implement congestion pricing?

- What does the local government do with money earned from congestion pricing?
- Where has congestion pricing been successfully implemented?
- Where has it failed?
- What might be some reasons for controversy over congestion pricing?
- Do you think your community would support congestion pricing in your city (or the nearest city)? Why or why not?

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## Parking Pricing

Synopsis: Investigates the ways that improving pricing schemes to reflect more accurate costs of driving can help provide revenue that can be invested in projects that make more equitable use of street space. Case Study: San Francisco.

- How might cars circling for parking spots cause problems for a neighborhood?
- How does raising the price on a parking spot differ from taking away a spot? Do you think one is better than the other?
- Should our local government make money off of parking spots? Is it fair to charge drivers?
- Should parking be priced to increase parking spot availability and turnover?
- What should be done with the money made from charging for parking?

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## Concluding Questions

- Do you think that taxing people for driving cars is the best way to encourage sustainable transportation and improve air quality? If yes, explain why. If no, provide an alternative plan.
- What would you want to tell policy makers to do differently when it comes to street design and policies related to the built environment?

## POST-SCREENING ACTIVITIES:

### Making the Connection

#### Activity: Case study of congestion pricing in London

- Learn about Congestion Pricing from three sources and then discuss them as a group.
- The first source is a New York TIMES article, entitled “Costly to Drive, Painful to Pay”: <http://www.nytimes.com/2008/03/16/automobiles/16LONDON.html>.
- Next watch an interview with a London driver on Streetfilms.org, “London Driver on Congestion Pricing” <http://www.streetfilms.org/london-driver-on-congestion-pricing/>.
- Last, go to Transport For London’s page with information about the charging zone, including maps and times, discounts for nearby residents, and auto pay <http://www.tfl.gov.uk/roadusers/congestioncharging/default.aspx>
- How do these three sources on congestion pricing in London compare to one another? How do they differ?

# MOVING BEYOND THE AUTOMOBILE

- How does Transport for London's online information show how congestions pricing is actually implemented?
- Do you agree with the London driver that congestion pricing is fair? Do you think it is something that should be brought to major cities in the United States?

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## Letter Writing

**Activity:** Compose a letter to an elected official

**Worksheet:** Outline Your Letter

Have a discussion with the students about why letter writing is important. Ask the class:

- Why is it important to share what we've learned?
- How can we write clear, strong letters to share our ideas with officials and our community, and make a difference?

Distribute the "Outline Your Letter" handout for the students to look over. Discuss all the parts they need to fill out. First, based on all the films they have seen, they need to determine a topic that most interests them, a purpose for writing the letter, and a recipient for the letter. Help them if they don't know how to determine the recipient - the most appropriate person to write to - they can wait to fill out that last line and ask you about their options. When students finalize their ideas for the letters. Have the students double-check that their outline is logical, factual, and corresponds with what they are requesting.

They should then fill out envelopes to the appropriate officials (see lesson six for a list of addresses). Your students can look up their national, state, and local

elected officials at Congress.org by typing in their zip code at the following address:

[www.congress.org/congressorg/dbq/officials/](http://www.congress.org/congressorg/dbq/officials/)

You can have the students present their letters to the rest of the class. They can choose an excerpt to read and the reason they chose to write their letters. Questions for them to cover when preparing to present:

- What aspect of urban planning or the built environment were you most concerned with improving?
- What does your letter request from officials?
- How, if officials implemented your request, would it lead to positive change (for example: save the city money, prevent crashes, improve air quality, lower carbon emissions, etc)? In addition to sending letters, you can make arrangements to have your students present their ideas to a larger audience. Some suggestions are as follows:
- Consider getting on the agenda of a local community council or community board. They might be an excellent audience.
- Find a like-minded advocacy organization to work with. These ideas that you have might be very helpful to their organization as examples of grassroots input.
- Create an exhibit of this work for your school, local library, museum or another public institution. You can include photos of your initial walk, survey results, all the way through to the letters that you will complete.

## PSAs

**Activity: Design and present and PSA**

**Worksheet: PSA Planning**

Explain to the class that they will be making PSAs about air quality. Have a discussion drawing from the following questions to prompt the conversation:

- What is a Public Service Announcement (PSA)? Can you think of some examples of campaigns you have seen before? Were they effective? Why or why not?
- Why is it important to educate the public?
- How can we be advocates in our communities for better policy and better planning practices?
- Are there certain issues that you feel are most important for the public to know about?
- Who is your audience (which “public” are you trying to reach)?

Depending on your preference, students can work alone, with partners, or in groups. Hand out the planning sheet and ask students to fill it out one step at a time in order to come up with an idea for their PSA. Make sure they follow this flow:

1. **Brainstorm:** Think through all that they learned from this unit that they want to share with others.
2. **Focus:** Based on what we have learned from the films and corresponding activities, decide on only one key point they would most want to make to a certain public or the government.
3. **Why:** Explain to their audience why their suggested change is worth making. Challenge students to be persuasive and come up with a number of reasons.

4. **Medium:** Decide which format to use for their PSAs. We have provided some examples - poster, PowerPoint, song, rap, dance, film, skit, speech, radio segment, website, etc - but they don't need to limit themselves to those options.

Next, students should make their PSAs. You can help them by bringing in some extra reading materials or facts, or they could do some Internet research on their chosen topic. They can present these PSAs to their classmates, the rest of the school, or leaders in their community.

## Further Resources

- SeeClickFix ([www.seeclickfix.com](http://www.seeclickfix.com)) is a website that allows anyone to report and track non-emergency issues anywhere in the world via the internet. This empowers citizens, community groups, media organizations and governments to take care of and improve their neighborhoods.
- “Students Take Action to Save Their MetroCards.” [www.streetfilms.org/students-take-action-to-save-their-metrocards/](http://www.streetfilms.org/students-take-action-to-save-their-metrocards/). Shares the experience of three high school students from New York City who traveled to Washington DC to meet with their Senator and other government staff regarding potential cuts to their city's student MetroCard program.
- “The High Cost of Free Parking.” <http://www.streetfilms.org/illustrating-parking-reform-with-dr-shoup/>



# Outline Your Letter

Use this outline to plan your letter to an elected official.

## Topic

(What subject will you write about? Buses, bike share, bike lanes, plazas, greenways, public art, subways, etc?)

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## Purpose

(What improvements you will ask for?)

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## Letter Recipient

(Who will you write to? If you don't know the appropriate official to contact, you can ask your teacher for help.)

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Now write notes for yourself about what information you will include in your introduction, 3-4 body paragraphs, and conclusion:

## Introduction

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**Body Paragraph 1**

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**Body Paragraph 2**

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**Body Paragraph 3**

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**Conclusion**

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Public Service Announcement (PSA)

## Planning Sheet

### BRAINSTORM

What did you learn about from doing this project that you would want to share with others?

### FOCUS

What one key thing would you encourage your community or local government to do differently to improve the built environment?

### WHY?

Why is this change an important one?

### MEDIUM

In what medium will you create your PSA (poster, PowerPoint, song, rap, dance, film, skit, speech, radio segment, website, etc)?