

POLICY

RESEARCH

REPORTS



Climate Change and Bicycling

How bicycling advocates can help craft comprehensive Climate Action Plans

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EXECUTIVE SUMMARY

Climate Action Plans are strategic and comprehensive tools to combat climate change by reducing Green House Gas (GHG) emissions. They are being written and implemented by cities, states, and universities in lieu of aggressive federal action. Bicycling is a convenient, enjoyable, and efficient way to make short trips – 40 percent of all trips in the United States are two miles or less – and it does not emit CO₂. As a result, policymakers are increasingly turning to promoting bicycling as a way to meet GHG reduction targets.

Bicycling advocates can help shape Climate Action Plans to include pro-bicycling policies. Using case studies and examples from existing plans, this report examines: 1. how pro-bicycling policies have been written into the Climate Action Plans of states, cities, and universities, 2. examples of plans that include bicycling, 3. how bicycling advocates can best support these efforts, and 4. how to ensure that governments follow through on the promises made in their plans.

Experienced advocates and climate planning experts recommend that advocates follow these steps:

- The **process** – Know what the public input process is; offer your advice as an expert
- The **people** – Know who is writing the plan; build relationships with the officials
- The **plan** – Contribute ideas, especially existing, well thought-out ones with quantifiable results
- The **public** – Conduct outreach and build support for the plan
- The **product** – Use the plan to make things happen; integrate the plan into the operating culture of the agency

Bicycling language in Climate Action Plans varies, but here are some key points to advocate for:

- **VMT and GHG reduction targets** – plans should identify vehicle miles traveled (VMT) reduction targets to reach GHG reduction targets. They can also include ambitious bicycle mode-share targets.
- **Complete the network** – plans should call for the prompt completion of the Bicycle Master Plan, if one exists, or the creation and implementation of one, if not. Improvements to inadequate plans should also be called for.
- **Funding** – plans should include increased funding bicycle and pedestrian infrastructure.
- **Design practices** – plans should call for Complete Streets policies that require the consideration of the needs of all users, and Smart Growth policies that encourage high-density and multi-modal land-use planning. Some plans include incentives or requirements for new buildings to provide showers and changing facilities and secure bicycle parking.

INTRODUCTION

For years, “Think Globally, Act Locally” has been a mantra of the environmentally-minded. Perhaps no activity embodies this spirit better than bicycling. Bicycling is great for short trips and produces no carbon emissions. In fact, [most trips](#) in the United States are local: half of all trips are three miles or less and 40 percent are two miles or less. Nonetheless, currently 90 percent of these short trips are taken by car.ⁱ The bicycle, which has long been associated with individualism, independence, and freedom, has become a symbol of local action for the globally-minded. Policymakers are now discovering that bicycling, if properly promoted and incorporated into planning, can also be a simple solution to complex problems. Increasingly, promoting bicycling is being embraced as an important tool to combat Greenhouse Gas (GHG) emissions.

While the world’s governments have been *thinking* about what to do about Climate Change, local governments, institutions, and individuals have been forced to *act*. While global climate talks [failed](#) to produce resultsⁱⁱ and federal legislation repeatedly [stalls](#),ⁱⁱⁱ action at the state and local level is quickly gaining momentum. Many states have taken their first steps towards crafting state-wide climate policies, cities have seized the initiative to plan for the future, and other public and private entities, like colleges and universities, have joined the fight to reduce carbon emissions. Collectively, the strategic documents that guide these efforts are known as Climate Action Plans (CAPs).

Climate Action Plans integrate GHG emission reduction goals for every key sector, making it a comprehensive approach. The signature of the governor, mayor, or university president adds validity and urgency to the need for action on climate change. In New York, Transportation Alternative’s Noah Budnick says that the mayor’s “vocal support and the comprehensiveness of the plan told New Yorkers that climate change is something that they should be thinking about every day.”

Although every sector needs to be a part of the solution, the transportation sector has considerable work to do. Transportation accounts for 70 percent of the oil used^{iv} and 28 percent of GHG emissions^v in the United States. To address this, nearly every Climate Action Plan includes a section on transportation. However, the transportation sections are frequently not as comprehensive and imaginative as other sections.

A bicycling component to the Climate Action Plans offers a number of benefits. Identifying and articulating biking policies and goals helps advocates keep governments and elected officials accountable. It shows that bicycling is part of the solution to climate change and an important part of the transportation system. “The emergence of Climate Action Planning represents a genuine opportunity for action on bicycling initiatives,” says Michael Boswell, Professor of City Planning at

California Polytechnic State University and a bicycling advocate, “Climate planning is yet another place that we can get in the right message about bicycling.”

Using case studies and examples from existing plans, this report examines: 1. how pro-bicycling policies have been written into the Climate Action Plans of states, cities, and universities, 2. examples of plans that include bicycling, 3. how bicycling advocates can best support these efforts, and 4. how to ensure that governments follow through on the promises made in their plans.

Every circumstance is different, and local conditions may lead advocates to slightly different approaches, but the case studies included in this report reveal what has worked, what to watch out for, and what lessons have been learned. Even though state, city, and campus conditions differ, there was considerable overlap in the recommendations given by the advocates, officials and experts interviewed.

Federal efforts and the need for local action

Despite the failure of international agreements and federal legislation, climate change is being recognized at every level as a major problem that needs to be addressed. And agencies have gotten creative in their approaches, often in ways that incorporate bicycling. Along with other federal transportation funding sources, the [Congestion Mitigation and Air Quality Improvement Program](#) (CMAQ) provides funding to bicycling projects and programs.^{vi} Funded by the American Recovery and Reinvestment Act (ARRA), [Energy Efficiency Conservation Block Grants](#) (EECBG) have been used to promote bicycling in places like Tacoma, Wash. In October 2009, President Obama signed Executive Order 13514, [Federal Leadership in Environmental, Energy, and Economic Performance](#), which requires Federal agencies to set GHG emissions reduction targets.^{vii} This executive order led the Office of the Federal Environmental Executive, in coordination with the Inter-Agency Task Force on Bicycling and Active Transportation, to release a guide (“[Implementing a Successful Bicycle and Active Commuting Program in the Washington, DC Metropolitan Area](#).”^{viii}) to help agencies meet their goals by promoting bicycle commuting. For a list of all federal and state executive orders related to Climate Change, see the [Center for Climate Strategies](#).^{ix} Finally, In March, 2010, Representative Earl Blumenauer introduced the [Active Community Transportation Act](#), known as The ACT Act, which, if passed, would provide substantial funding for non-motorized investments.

Nonetheless, most of the action occurs at the local level, where cities and universities are providing the leadership. Professor Stephen Wheeler, an expert in state and local Climate Action Plans at the University of California, Davis writes, “In interviews, officials repeatedly lamented the lack of federal action on this topic, but expressed the belief that in lieu of federal leadership it was imperative for states and cities to take action.”^x As Michael Boswell explains, “The story of CAPs is that it’s been a bottom up process.” Because much of the serious climate planning is happening at the local level, and

bicycle-planning is often viewed as the domain of localities, there are good opportunities for bicycling advocates to get involved.

About Climate Action Plans

Climate Action Plans vary considerably in their form. Some are relatively short and general, focusing on goals, current actions, and future plans. Others are long and detailed, numbering hundreds of pages. Some are elaborately designed, others are simple.

The planning process also varies by state. Many of the first batch of climate change plans were written by one department or consultant without much input from the public. More recent plans tend to have more inclusive processes and consider the views of more diverse stakeholders.

In terms of content, most city plans follow the five milestones of [ICLEI – Local Governments for Sustainability](#): calculating emissions, adopting targets, developing policies, implementing measures, and monitoring results.^{xi} Many state plans also use these milestones, especially the first three. As part of their policy recommendations, plans usually include a transportation section.

Professor Wheeler's review of Climate Action Plans revealed several concerns. These were often acknowledged and addressed by bicycling advocates who participated in climate planning processes. Implementation was an issue: it can be difficult to track the progress, funding is frequently not dedicated to implementation, and some recommendations can be politically difficult to achieve. There was sometimes insufficient public understanding and involvement: most people are aware of climate change but not necessarily prepared to make changes to address it, and attendance at public meetings was sometimes low.^{xii}

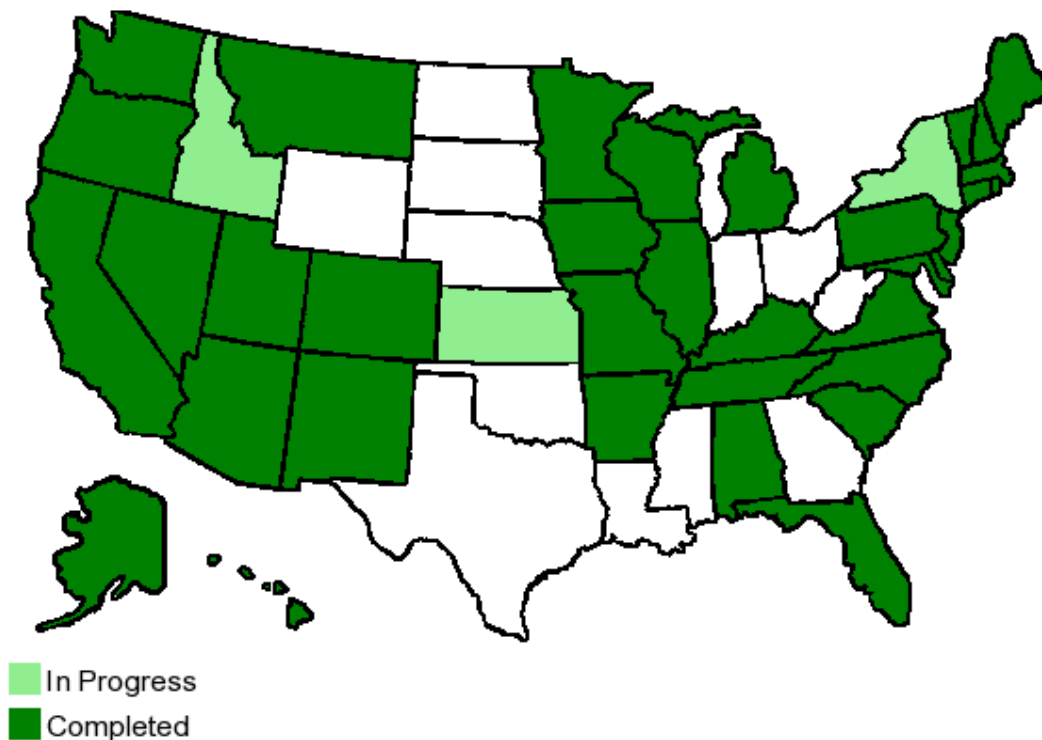
STATE CLIMATE ACTION PLANS

In the 1990s many of the first state-level plans were funded through Environmental Protection Agency grants that provided money for states to measure GHG emissions and design mitigation plans. The [Center for Climate Strategies](#) has helped develop emissions inventories for states, by facilitating stakeholder processes and tailor plans to the state.

State plans can be initiated by a number of different departments, including those of environmental protection, air quality, or energy, or by the governor's office. Some states also work with regional consortia to coordinate efforts. State plans tend to be broader and more general than local ones.

According to the [EPA's State Climate Action Plan database](#)^{xiii}, as of July, 2010, 38 states have Climate Action Plans completed or in progress. The map below, from the Pew Center on Global Climate Change, shows the states that have completed plans or plans in progress.

State Climate Action Plans



Source: Pew Center on Global Climate Change (<http://www.pewclimate.org/sites/default/modules/usmap/pdf.php?file=5900>)

Navigating the planning process at the state level

Every state has a different process for creating plans, and these processes have changed over time. Below are some general pieces of advice from people that have been involved in the planning process. Whatever the process in your state, bicycling advocates need to know it and understand it to be effective. Find out which agency is taking the lead. Reach out to them, letting them know you are available to contribute and so that you stay apprised of the public input opportunities.

Generally there is a sub-committee in charge of writing the transportation section of the plan. Ideally, a member of this committee would speak up for bicycling. “You need someone to slog out the details,” says Sam Sadler, who worked on the Oregon plan. Bill Drumheller, who coordinated the plan for the Oregon Department of Energy, recommends having someone on the committee who can speak to a wide range of transportation issues in addition to bicycling. It can be difficult to find room on a committee for people with only narrow areas of focus. It is best to find someone who “wears multiple hats” and can represent bicycling and walking in the broader context of Smart Growth, Complete Streets, transit, and other related policy areas.

In addition to having an inside voice, bicycling advocates should make use of the public input process by using all of the formal opportunities. Climate planning has become more open and inclusive since the first plans were written. Advocates should find out where and when there are opportunities to contribute. Involve your constituents, work with other stake holders to build a coalition, and attend and speak up at focus group meetings.

Making the case

During committee meetings, public hearings, and focus groups conversations, bicycling advocates need to make the connection between bicycling and GHG emission reductions. By creating a safe, convenient, and attractive alternative to driving, bicycling investments can help get people out of their cars, reduce vehicle miles travelled (VMT,) and lower carbon emissions. There are also co-benefits of bicycling – health, [economic](#), congestion mitigation, quality of life – that can make promoting it worthwhile.

One of the major challenges to making bicycling a large part of climate plans is the difficulty in quantifying the benefits. Planners often rely on the concept of the “stabilization wedge game” created by Stephen Pacala and Robert H. Socolow of Princeton. It is a way to conceptualize what steps are needed to keep GHG emissions stable using existing technologies. In this model, the total amount of GHG reduction needed is divided by 15 “wedges,” grouped into four categories: efficiency, decarbonization of power, decarbonization of fuel, and forest and agricultural soils. One planner articulated the difficulty for bicycling advocates by saying, “If it’s not going to get you a ‘wedge-worth’ of

reductions, it may not get included.” This is all the more reason to combine bicycling promotion with



other, broader policy initiatives.

Carbon Mitigation Initiative, Princeton University

Quantifying the emission-reduction potential of bicycle and pedestrian promotion efforts is challenging. Planners want to know, if I build a mile of bike lane, how many pounds of CO₂ can I expect to save? There have been efforts made to answer this question.

Cities have been more pro-active than states in quantifying carbon reductions. The [City of San Carlos, Calif.](#) quantified the amount of carbon reduction expected from requiring bike parking for commercial projects, requiring large employers to provide facilities such as showers and indoor parking that encourage bike commuting, and bike-friendly street design.^{xiv} Oregon Department of Energy’s Bill Drumheller suggests that if enough localities produced their own estimates, the results could be extrapolated to establish reliable state-level numbers.

It’s not just cities that have been trying to quantify the GHG benefits of reducing car dependence. The American Public Transportation Association has developed “Recommended Practice for Quantifying Greenhouse Gas Emissions from Transit,” which helps planners calculate the GHG reduction benefits of transit. One of the factors they consider is the power of transit to encourage walking and bicycling trips. The Federal Highway Administration (FHWA) lists a [number of resources](#) that can help planners quantify the environmental impact of non-motorized transportation.^{xv}

Overall, the history of bicycling in state climate action plans mirrors climate planning generally. There has been progress, but the real innovation takes place at the local level. In fact, lessons from the local level can be applied to the state. Advocates who cut their teeth on local plans will be well-positioned to guide the direction of regional or state plans when the opportunity arises.

Examples

As part of the [Bicycle Friendly State](#)^{xvi} program, the League analyzed the state plans and found that 18 of them mention bicycling in some way. Most plans that include bicycling do so briefly, often recommending:

- high density planning or smart growth policies ([Connecticut](#),^{xvii} [Iowa](#),^{xviii} [Michigan](#),^{xix} [Minnesota](#),^{xx} [Utah](#)^{xxi})
- intermodal connectivity or transit-oriented development ([Arizona](#),^{xxii} [Wisconsin](#),^{xxiii} [Vermont](#)^{xxiv})
- school access and siting^{xxv} policies ([Alaska](#),^{xxvi} Minnesota, Michigan)
- bicycle infrastructure (Connecticut, Iowa)
- mode-share increase goals ([Maryland](#)^{xxvii}) or
- encouragement ([New Jersey](#)^{xxviii}).

Some plans offer more detail. [New York State's](#) plan^{xxix} dedicates a paragraph to bicycle and pedestrian recommendations, calling for safe bike parking, employer incentives, and pedestrian-friendly development:

Bicycle paths are practical for consumers and shoppers – not just recreational users. NYSDOT should provide safe bicycle parking at transit stations and install bicycle racks on buses. NYSDOT should work with employers to provide incentives for employees who bike to work. The State should place priority on promoting pedestrian-friendly land use planning and design, including interconnected streets, safe crossings, and mixed-use development.

[Virginia's plan](#)^{xxx} recommends that the Commonwealth Transportation Board build on recent construction standards which promote bicycling and walking and that they “ensure that funding is available for localities to implement these standards, develop and provide funding and technical assistance to encourage local governments to construct pedestrian and bicycle improvements, and compile and coordinate local and regional plans to develop a pedestrian and bicycle network.”

The strongest plans – like New Hampshire's (see box below) and Oregon's – call for both bicycle and pedestrian-friendly design practices and funding for bicycle and pedestrian projects. At least two states call for Complete Streets policies. The [Washington state](#) plan^{xxxi} says, “The legislature should adopt policy based on the concepts identified in the Complete Streets national movement.” The New Hampshire plan urges the state to “expand [the] existing bike-ped program, along with implementing “complete streets” approaches that ensure that all modes of travel are accommodated and supported.”

As the New Hampshire example suggests, states sometimes expand on existing initiatives in their plans. [Rhode Island's](#) plan^{xxxii} builds on the state's Greenspace and Greenways Element of the State Guide Plan, the existing bikeways and other efforts throughout the State, in order to “create more bicycle lanes and paths, eliminate hazards to cyclists and pedestrians, improve street network connectivity, as well as

establish pedestrian malls and walkways, through grant programs, incentive systems, zoning and regulations." As we will see at the local and university level, incorporating existing projects into Climate Action Plans is common. Doing so allows planners to incorporate credible, thought-out elements into their broader framework.

[Oregon](#)'s plan^{xxxiii} tackles the problem of GHG emissions from automobiles in a number of ways that relate to bicycling. For example, the plan takes on parking. It recommends reducing or eliminating minimum parking requirements for businesses, or creating maximum parking requirements. Minimum parking requirements, the plan says, can over-provide for parking because they are based on infrequent peak events and that "Minimum requirements can provide a bias in favor of car drivers at the expense of pedestrian, bicycle, and transit users."

The Oregon plan also addresses funding. "The majority of all federal transportation dollars are flexible," it says, "yet 53 percent of them go toward highway infrastructure while only 12 percent go toward transit. The State could redirect more of this funding toward alternative transportation instead of using it primarily to build new roads."

These examples from state Climate Action Plans show that, while most state plans remain general, they can be used to promote bicycling as a tool to reduce VMT. Even without the involvement of bicycling advocacy groups, many states have added language to promote bicycling in order to meet their goals. By following the best examples that tie in funding, Complete Streets, Smart Growth design, infrastructure and promotion, state plans that are revised or yet to be written can be made even stronger.

CITY CLIMATE ACTION PLANS

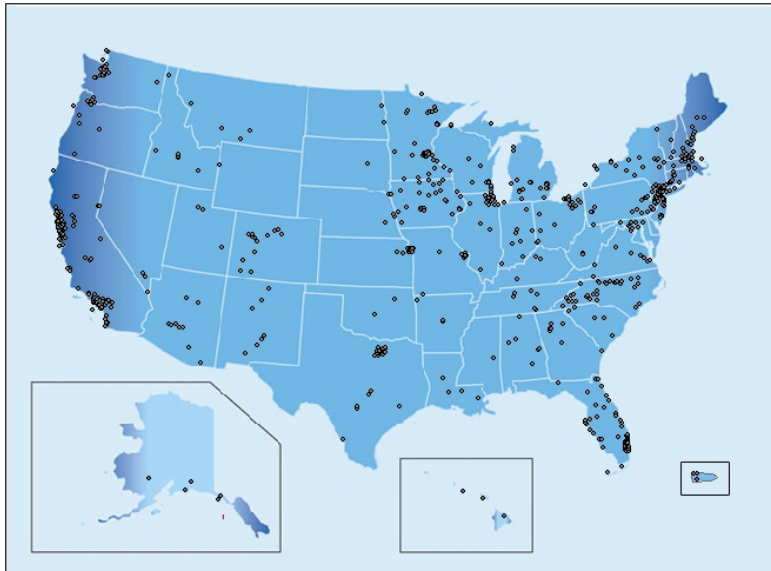
“Cities are where the action is on climate planning. They are pushing the envelope.”

– Professor Michael Boswell
City & Regional Planning Department
California Polytechnic State University San Luis Obispo

In the absence of aggressive federal and state leadership, cities have pioneered climate planning. There are a number of networks that local governments have partnered with to make progress on GHG reductions in concert with others.

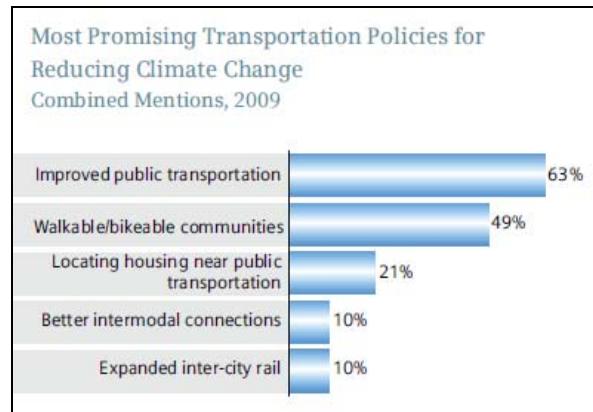
Over 1,000 mayors have signed onto the [U.S. Conference of Mayors’ Climate Protection Agreement](#) to:

1. meet or beat the Kyoto Protocol targets, 2. urge their state governments, and the federal government, to enact policies and programs to meet or beat Kyoto Protocol – 7 percent reduction from 1990 levels by 2012, and 3. advise the U.S. Congress to pass the bipartisan greenhouse gas reduction legislation, which would establish a national emission trading system.



Cities whose mayors have signed the Mayors Climate protection Agreement
(Source: US Conference of Mayors, Mayors Climate Protection Center, used with permission)

In a survey of 140 mayors conducted by U.S. Conference of Mayors, reported in the [Metropolitan Infrastructure Sustainability Study](#), half of the respondents said that creating bike-able and walk-able communities counted among the most promising transportation policies for combating climate change.^{xxxiv} Not bad for modes of transportation that receive a fraction of the total funds spent on transportation.



(Source: [Metropolitan Infrastructure Sustainability Study](#))

Between 100 and 200 cities and counties have Climate Action Plans. Most follow the guidelines mentioned above – the five milestones of [ICLEI – Local Governments for Sustainability](#). ICLEI was established in 1990 and provides local governments with tools to meet GHG reduction goals.^{xxxv}

Navigating the planning process at the city level

Experts in climate change planning for cities make many of the same recommendation to bicycling advocates as at the state level. Again, they involve understanding and working with the process, the people, the plan, the public, and the product.

Advocates should:

- find champions inside the planning process
- take advantage of public input opportunities
- draw on existing plans to make concrete suggestions
- quantify the impacts of bicycling on GHG emissions
- generate public support for the need for climate action and for specific components to be included, and

- work with the public and the city to ensure the plan’s implementation

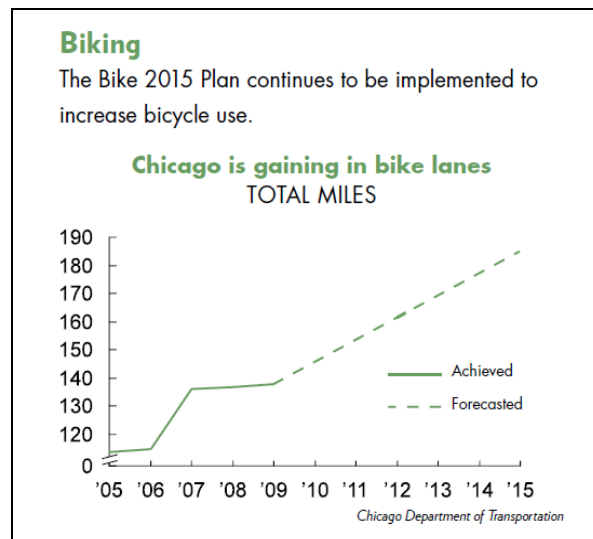
“Big picture” vs. detailed plans

Before getting into examples, it is worth noting that there are, broadly speaking, two different approaches or types of plans: *Big Picture vs. Technical*. They can be visionary or focus on specific matters of implementation. Often this depends on who writes the plan and how they view what’s needed from it. Both approaches can prove useful to bicycling advocates.

When a city has written a visionary plan, it has put down specific, sometimes ambitious, goals. The means to achieve them are not necessarily as defined. The most commonly cited example of a visionary plan is that of the City of Chicago.^{xxxvi} Regarding bicycling, the plan says:

The city aims to boost walking and bicycle trips to one million a year, doubling the current number. Proposed steps include the implementation of the Bike 2015 Plan and the Chicago Pedestrian Plan, netting a direct .01 MMTCO₂E drop in GHG emission by 2020. The fringe benefits of these plans are many, including saving many families the cost of a second automobile.

Visionary plans can be useful because they set benchmarks for carbon reductions and spell out a methodology for measurement. This allows the city and advocates to track progress. If progress is not being made, advocates can use the plan to push the city forward. If the plan was passed by the city council, litigation may also be an option if the city violates its own plan. Chicago released a two-year [progress report](#) after their plan, which includes this chart which shows how much is left to do:



Rob Sadowsky, who was active in the planning process as executive director of Chicago's Active Transportation Alliance and is now executive director of the Bicycle Transportation Alliance in Oregon, recommends this type of plans. He says, "Don't get lost in the details." Rather, set good goals, "get a strong VMT reduction goal. The details are less important." He also recommends pushing for all encompassing policies, like [Complete Streets](#). (Sadowsky called the 2 year committee process "painful" overall, but said "in the end we got some good things.")

On the other hand, specific plans also have their strengths. A detailed plan can be used to attract federal funding sources, like [EECBG block grants](#), for example, by showing that the city has a detailed plan in place. Note that the agency can compete more competitively for the grant by showing exactly how the funds will be used and how they fit into the larger picture. For a community to get funded using the climate plan, the bicycle components need to be prioritized in the plan. [City of Hayward, CA's](#) 252 page plan is a good example of a detailed plan. It mentions bicycling several times. In particular, it recommends completing the 2007 Bicycle Master Plan, modifying parking ordinances to encourage bicycling and walking and examining "intersection performance" for bicycling.

With these more specific plans, it is important to get the language right. For example, occasionally, the Climate Action Plan bicycle proposals are not consistent with the Bicycle Master Plan. This can leave out high priority bicycle projects in favor of less important ones. Advocates are advised to be well versed in existing plans and needs and come armed with additional copies when attending meetings.

No matter which type of plan you have, advocates should use it to leverage the plan into productive outcomes, whether by pressuring the city to achieve its own goals or by completing specified projects.

Examples

Since climate action plans generally have the goal of reducing vehicle miles traveled, it is common for them to include bicycling promotion. Here are a few examples and Berkley's plan is in the call out box below:

- [Bloomington](#), ID plans to increase connectivity for bicyclists by building out bicycle boulevards, amending the Bicycle, Pedestrian and Greenways Plan to significantly increase the number of planned "lengthy corridors," and making bike riding on major arterials safer. They also call for bicycle-friendly land-use planning and easier bicycle access to food shopping.^{xxxvii}
- [San Francisco's](#) plan calls for improved bicycle access to transit, requiring new developments to provide showers and changing rooms (and/or subsidizing retro-fitting,) and increasing marketing and promotion of bicycling through advertising and events.^{xxxviii}

- The City of [Denver](#), Colo. plans to maintain compact growth boundary, encourage high-density development, encourage corporations to increase bike lockers and showers, and support “alternative transportation” including bicycling.^{xxxix}
- [Cambridge](#), Mass.^{xi} will install more bicycle lanes and parking facilities and expand efforts to retrofit streets and intersections to better accommodate bicycles and pedestrians. They will undertake an outreach campaign to promote non-motorized transportation to reduce motorized vehicle travel and establish a bicycle-sharing program.
- [Portland](#), Ore. and Multnomah County^{xii} aim to:
 - use bicycles to improve quality of life,
 - “create vibrant neighborhoods where 90 percent of Portland residents and 80 percent of Multnomah County residents can easily walk or bicycle to meet all basic daily, non-work needs and have safe pedestrian or bicycle access to transit,”
 - build 15 miles of bicycle boulevards before 2010 and aggressively implement the City’s Bicycle Master Plan,
 - incorporate improved bicycle and pedestrian infrastructure in the redesign of the Sellwood Bridge, and
 - require a minimum amount of long-term bicycle parking spaces for multi-dwelling development in areas other than the dwelling unit.

The [Homer](#), Ark.^{xiii} plan calls for Complete Streets, bike sharing (“bike library,”) and bike racks at all public buildings.

In the plan for [Key West](#), Fla.^{xiiii} the transportation section aims to reduce GHG emissions by 12,681 tons by cutting vehicle miles traveled. The first transportation item calls for the city to “Implement the full Bicycle/Pedestrian Plan as approved by the City Commission, along with recommendations listed in the actions section of this plan including curb cuts, safe sidewalks, increase bicycle parking and bike racks at every lower keys shuttle bus stop.”

The Key West planners market their initiatives as “challenges.” One is the “Bicycle Pedestrian Challenge.” The project promotes walking and biking to reduce VMT by:

- providing bike racks at bus stop,
- establishing a sub-committee to oversee public and private sector promotion,
- completing the bicycle pedestrian plan,
- maintaining and improving path and lane markings,
- airing TV shows and commercials encouraging people to ride bikes throughout town,
- hosting a quarterly walk & bike to work day,
- running Safe Routes to Schools programs,
- encouraging schools to give out extra credit for biking and walking,
- adding bike storage/ service centers,

- engaging in comprehensive traffic planning to improve bike traffic flow, and
- removing excess stop signs or marked crossing and replacing them with traffic calming devices.

What's in Berkeley, Calif.'s Climate Action Plan?

Berkeley's plan would:

Integrate bicycle boulevards and pedestrian networks into a broader alternative transportation system and identify mobility gaps that could be addressed through additional bicycle/pedestrian infrastructure. Additional infrastructure could include bicycle lanes and boulevards, signage showing distance to various destinations, sidewalk lighting, etc. Explore funding from such programs as the "Safe Routes to Transit" program for this purpose.

Extend Bicycle Boulevard network. For example, construct an extension on the 9th Street Bicycle Boulevard.

Improve cross-jurisdictional bicycle route connections through signage, bikeway route modification where warranted, and physical improvements.

Identify opportunities to modify City streets to better serve the safety and needs of pedestrians and cyclists. Street modifications that serve to slow or reduce automobile traffic and make walking and cycling more safe and viable include traffic circles and allocating additional roadway space to cyclists. The City should develop and adopt "Complete Streets" design standards, and routinely accommodate bicycle and pedestrian improvements in all streets and sidewalks projects.

Identify opportunities to modify City streets to better serve the safety and needs of pedestrians and cyclists. Street modifications that serve to slow or reduce automobile traffic and make walking and cycling more safe and viable include traffic circles and allocating additional roadway space to cyclists. The City should develop and adopt "Complete Streets" design standards, and routinely accommodate bicycle and pedestrian improvements in all streets and sidewalks projects.

Continue to create additional bicycle parking throughout the community, including near transit centers and other key destinations and as part of any new development projects.

Provide adequate sidewalk width, pedestrian crossing time, "countdown" signals, and universal access signal features at all signalized crosswalks.

Evaluate the need for new mid-block pedestrian crosswalks where there are high volumes of pedestrians and a long distance between intersections.

Regularly update the Bicycle and Pedestrian Plans, including updating indicators of pedestrian and cyclist safety.

Consider establishing a network of bicycle rental stations. As a first step, conduct a feasibility analysis to help identify program design, costs and funding options.

Quantifying GHG reductions

Just as at the state level, city plans are moving toward more quantifiable outcomes. This can present a challenge for bicycling advocates. Replacing car trips with biking trips certainly reduces carbon emissions from those forgone drives. But how many bike trips will an investment induce? How many of them are replacing car trips? There is no universal formula, but a number of efforts have been made to estimate the carbon-reducing potential of shifting trips away from the automobile.

ICLEI provides an [Active Transport Quantification Tool](http://att.ccp.iclei.org/more/about) for this purpose.^{xliv} They document their assumptions here (<http://att.ccp.iclei.org/more/about>).

A report by Cambridge Systematics called “Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions” estimated emissions reductions for a wide range of transportation interventions.^{xlv} They developed reduction estimates for bicycling based on three different levels of “deployment” – expanded, aggressive, and maximum. They conclude that “combined pedestrian and bicycle infrastructure and policies applied nationally would result in a cumulative 0.2 percent to 0.5 percent reduction in baseline emissions, but **can be achieved at a relatively low implementation cost, and with positive public health benefits.**”

There is also precedent among state Departments of Transportation to measure GHG reductions. Many state applications for Congestion Mitigation and Air Quality Improvement Program (CMAQ,) a federal funding program, ask applicants to estimate the congestion and GHG reduction impacts of their bicycle and pedestrian projects. A federal [review of CMAQ](#) bike/ped projects found CO reductions of up to 38.4 kg emissions reductions each day. They note that these projects are “more effective when designed to enhance access to transit, so that longer trip lengths may be reduced.”^{xlvi}

Here is an example of [Colorado’s CMAQ formula](#), which determines annual VMT reductions using this formula:^{xlvii}

Bicycle/Pedestrian			
AVMTR = PSOV * Nd * D			
Variable	Default	Units	Description
PSOV	-	unitless	Proportion of users (expressed as a decimal) that formerly commuted by single occupant vehicle
Nd	252	days	Number of benefit days per year.
D		miles	Total number of miles traveled on new facility per day (for all users)

In [Cincinnati](#), OH^{xlviii} planners calculated the amount of emissions they could avoid if their bicycle mode share was that of St. Paul, MN: “There are currently approximately 5,000 —bike to work trips per day in Hamilton County (.15 percent). If this number were increased to 23,000 trips per day (.67 percent, still considerably below the national average), the resulting greenhouse gas savings would be 6,300 tons per year.”

Here’s how Cincinnati did the calculation:

		Current	Proposed
Hamilton County Daily Person Trips (2005)		3,374,919	3,374,919
% of Hamilton Co. workers over 16 that bike to work	multiply by	.15%	.67% (St. Paul, MN)
	equals	5,000 bike trips/day	23,000 bike trips/day
Average bike trip length	multiply by	4.7 miles/trip	4.7 miles/trip
	equals	24,000 bike miles per day	108,000 bike miles per day
Regional average vehicle occupancy	divide by	1.34 persons/vehicle	1.34 persons/vehicle
	equals	18,000 vehicle miles per day averted	81,000 vehicle miles per day averted
CO2 emission factor	multiply by	454 grams/mile	454 grams/mile
CO ₂ averted	equals	8,172,000 grams CO ₂ /day	36,774,000 grams CO ₂ /day
Grams in a ton	divide by	907,185.5	907,185.5
	equals	9 tons/day averted	40.5 tons/day averted
5 days/week x 40 weeks of bike weather per year	multiply by	200 days per year	200 days per year
Tons of CO₂ averted per year	equals	1,800 tons/year	8,100 tons/year

Source: OKI Regional Council of Governments, EPA.

Case Study: Transportation Alternatives and New York City's PlaNYC

New York City is America's largest city and a city whose leadership has taken seriously the promotion of bicycling to address the city's population growth, transportation needs, congestion, quality of life, and the environment.^{xlix} Their plan was called "[PlaNYC](#)."

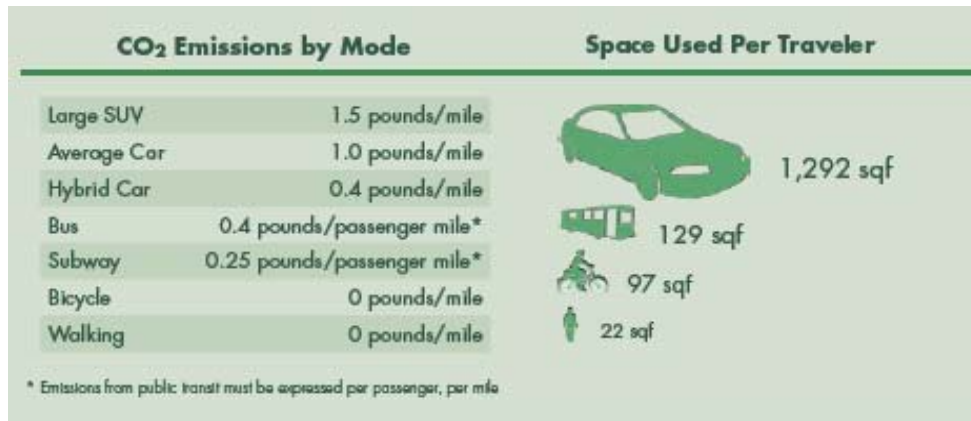
There were ambitious bicycling components of the plan: 1. Complete the bicycling network – 200 miles of bike lanes by 2009 (phase 1) and then complete the remaining bike lanes for a total of 1,800 by 2030 (phase 2), and 2. Facilitate bicycling by installing 1,200 additional on-street bicycle racks throughout the City by 2009.^l Pedestrians were also considered, in particular in improving sidewalk access to transit.

However, bicycling and transportation reform advocates also campaigned heavily for congestion pricing, which would charge drivers for entering downtown Manhattan to reduce congestion and carbon emissions. The local advocacy organization, Transportation Alternatives (TA) recognized that reducing car traffic in the city would improve bicycling conditions and that the funds generated from the fee would be dedicated to improving public transportation.

Over the course of the campaign for a bicycle-friendly climate plan, TA raised awareness about the issue of climate change and built *public* support for elements in the plan, built relationships with the *people* involved, participated in the public input *process*, contributed ideas to the *plan* at every opportunity, and urged the city to institutionalize the final *product* to ensure the elements of the plan were implemented over the long haul.

Before the plan – Laying the groundwork

Two years before the plan was written, TA got together with bicycling advocacy groups from three other major cities – San Francisco, Seattle, and Chicago – to produce a report on the role of active transportation modes like bicycling and walking can play in fighting climate change. The idea came up over drinks during the [National Bike Summit](#). The outcome was the [Urban Transportation Report Card](#), released before PlaNYC.^{li} The report packaged an accessible message about climate change to TA's audience that compared conditions and responses across cities. TA's Noah Budnick said "it had high value for the time spent on it," for the way they were able to use it to draw attention to climate change.



An illustration from the Urban Transportation Report Card

TA did a lot of education around building congestion pricing and bicycling elements in the plan. They made sure to have their members provide input during each of the public input opportunities armed with talking points provided by TA. When the city held town hall meetings to gather input on what should be included in the plan, TA undertook a major turn-out effort. They sent their members a postcard with three talking points urging the plan to include completion of the bicycle network, pedestrian initiatives, and congestion pricing. The messages on the cards were customized for each borough and reached all of TA's members. TA also set up a phone bank to increase turnout. The result was that at each town hall meeting there was at least one person at each table pushing for congestion pricing. This public support is critical, even and especially when the top leadership of the city supports the idea – they need political cover to undertake bold initiatives.

DEAR TRANSPORTATION ALTERNATIVES MEMBER,

The Mayor is considering historic changes to NYC streets. But he needs to know that he has public support before he commits. **Please attend your local plan NYC Town Hall Meeting** and let the Mayor know that New Yorkers want:

1) TRAFFIC RELIEF!

There is too much traffic cutting through our neighborhoods. NYC needs congestion pricing, traffic calming and market-rate parking pricing. Nine of ten Manhattan-bound drivers have transit options they are not taking, largely because 60% of them get free parking.

2) SAFER BIKING AND WALKING!

It must be safer to walk and bike in NYC. This would give New Yorkers viable options to eliminate that 22% of citywide driving trips that are one mile or less. NYC needs a "Complete Streets" policy so that anytime the City is reconstructing or repaving a street, more space for safe biking and walking is installed automatically.

3) CAR FREE SPACE!

With obesity, diabetes and heart disease reaching chronic levels, we need to reclaim street space for activity-inducing pedestrian plazas, greenways and parks.

Share your experience and ideas to achieve these three changes with the Mayor's office at your borough's PLANYC Town Hall Meeting! By voicing local support for these common goals, we will give Mayor Bloomberg the support to achieve them. >>>

Talking points from TA

During the development of the plan, TA's Deputy Director Noah Budnick says, "we inserted ourselves in every possible nook and cranny" to get their priorities included. They made unsolicited recommendations to city staff and consultants. They sent letters, co-signed with allied groups.

It helped that city hall had set up a good process to reach out to experts in the various issue areas, with the aim of putting together a high quality and ambitious plan. TA was invited to come in for a meeting with the city's sustainability council. One lesson from the process: the more input City Hall solicits, the better the plan is going to be. The message from advocates should be that the process should be open to public and expert input. From there it is up to the advocates to educate the policymakers, generate support among the public, and encourage turnout.

The plan – Shaping a bicycling-friendly Climate Action Plan

In addition to all of the public outreach and private consultation, TA found these two elements to be helpful in shaping the plan:

Have a champion in City Hall. Get the buy-in of top officials in city hall. Have them champion the policy innovations you support. Congestion pricing was included in PlaNYC because the Mayor saw the value in it and had good people he trusted working on the plan. Without the Mayor's interest in congestion pricing its inclusion in the plan would have been diminished.

Have a plan already started. Dani Simons, the communications director for the New York City Department of Transportation, says that if your request is too general "you'll just spin your wheels." She recommends a concrete request, supported by examples and background research. If an idea is a good one, the chances are that someone has worked on it. This gives you a chance to take advantage of that earlier work. If the project has not been started, get to work on the plan right away.

Many of goals pre-dated the writing of PlaNYC. The biggest bike initiative – the 200 mile goal – was borrowed from the city's 2006 biking and walking report. TA did an organized campaign to get the city to commission the study. (The study was the #1 ask of the campaign.) One of the Action Steps included in the final report was the pledge to build 200 miles of bike lane by 2009.

After the plan – Getting your city to follow through to achieve the goals of the action plan

Once the plan is written the work of implementing it begins. "Everything we put in a proposal – every bike lane – is a fight" says NYC DOT's Dani Simons. Advocates must continue to build public support for individual components by keeping open lines of communication with the city and doing the sometimes tedious, but necessary, work of organizing public support around specific projects, she says, because "that's what it takes to get it done."

In addition, Simons notes that advocates are important in "building wide-spread acceptance of the plan." TA spent a great deal of time and energy educating the public on the plan, because as Budnick

says, the city's leaders "are not going to do something if the public is against it." To this end, TA produced at least half a dozen reports – on traffic, on car ownership, on transportation costs and income levels – to promote the initiatives^{lii}. They worked with the press and did public presentations to raise awareness of the need for and benefits of bicycling and traffic reduction initiatives.

With term limits in place – even though the rules were recently changed – TA knew it had to find a way to make the changes last beyond the current administration. TA "beat the drum" for the city to institutionalize the effort through initiatives designed to meet the goals. The aim was to change the way city agencies operate. "It's like teaching a man to fish ... you can teach an agency to paint a bike lane..." Budnick started to say and then added "the analogy is in there somewhere." With TA's support, the city undertook a series of initiatives to ingrain the values of sustainable transportation within the Department of Transportation.

According to Budnick, PlaNYC "acted as a springboard for other initiatives," primarily city-produced reports, that would expand on PlaNYC and add policy details. The Department of Transportation produced the "*Sustainable Streets Index*" in 2007 and 2008, which set measurable goals for biking.^{liii} The DOT's *Public Plaza* initiative set the goal that people within every Community Board, New York City's neighborhood-level political entities, should be within a 10 minute walk of a park. The DOT's *Street Design Manual* was written to implement design practices that would help achieve PlaNYC's goals.^{liv} And DOT's *Active Design Guidelines* was created to provide "architects and urban designers with a manual of strategies for creating healthier buildings, streets, and urban spaces."^{lv} Once the plan was codified in the PlaNYC document, it became official city policy, and realized through these initiatives. This made it easier for city commissioners, if they chose to, to prioritize sustainability goals.

In the end, the New York City Council did not pass the congestion pricing law, but New York City undertook an ambitious effort to complete the 200 miles of bike lane and build innovative bicycling treatments.

Case Study: Walk Oakland Bike Oakland

Working with the Oakland Climate Action Coalition to draft an Energy and Climate Action Plan

In April 2010, the City of Oakland released the draft of their [Energy and Climate Action Plan](#). The Oakland Climate Action Coalition is an important group advocating for It included representatives from more than 40 groups, including Alameda County Green Business Program, Sierra Club, International Brotherhood of Electrical Workers Union Local 595, US Green Building Council, and many other environment and social justice orgs that work in Oakland. Carli Payne, the board chair of Walk Oakland Bike Oakland (WOBO,) shared her experience on the Transportation and Land Use Committee of the Oakland Climate Action Coalition (OCAC).

Payne describes the committee process:

Together, we [the OCAC] developed a platform with principles and policies. Each committee had to identify the top policies that would make the most impact to the city reducing GHG emissions from that sector and further social equity. WOBO helped write and refine these for the transportation committee. The policies included aggressive implementation of the Bike and Ped master plans, a new transportation impact fee on development, and the creation and implementation of a transportation master plan.

Oakland does not currently have a transportation master plan or a transportation commission, which have hindered strategic thinking about multi-modal investments. To build public support for the plan, the Coalition participated in public events and undertook efforts to raise awareness:

The OCAC hosted an event that all of the participating organizations helped to craft and populate with our members and allies. Several City Council members showed up to the event, which packed Laney College's auditorium.

In preparation for the draft Energy and Climate Action Plan's release, the OCAC met with key city staff members and Council members. WOBO participated in several of these meetings.

On the day of the City Council meeting at which the draft ECAP was presented, the OCAC held a rally in downtown Oakland. OCAC members had made props that included bicycles, signs that said pedestrian crossing, among others that represented green jobs, local food, etc. WOBO members attended the rally and the public hearing, donning bike and walking costumes and holding props.

The careful thinking and public outreach was successful:

The draft ECAP includes all of our recommendations as priorities for the first three years of the plan's implementation. In addition, WOBO and several other allies have been meeting with Council staff about the potential to create a transportation commission. WOBO was influential in ensuring that there would be clear coordination between a transportation commission and the existing Bicycle- Pedestrian Advisory Committee.

The OCAC has submitted comments on the ECAP to the City. Our collective comments took the form of rewriting the plan, with greater attention to social equity and the inclusion of strategies that would accelerate our priorities (for instance, identifying funding sources or the potential to partner with key community organizations instead of relying on the strapped City General Fund for resources)

COLLEGE AND UNIVERSITY CLIMATE ACTION PLANS

Colleges and universities have long been hot spots for bicycling and bicycling activism.^{lvi} They have also been on the forefront of the environmental movement and, in the past two decades, Climate Action Planning. By ingraining good habits for the future, encouraging college students and faculty to embrace non-polluting, active transportation modes like bicycling and walking can have benefits beyond the present day.

This section describes many of the climate change initiatives taking place at the college and university level, advises bicycling advocacy organizations on working with universities, and tells the story of the University of Pennsylvania's climate planning and their incorporation on bicycling.

Resources

Perhaps the most visible higher education leadership on climate change has come from the [American College & University Presidents' Climate Commitment](#).^{lvii} Six hundred and seventy-four college and university presidents have signed the climate commitment, as of August 2010. They commit to developing a comprehensive climate plan, undertaking specific actions from a provided list, and then publicizing the action plan, inventory, and progress reports through the Association for the Advancement of Sustainability in Higher Education (AASHE). This commitment has led to the creation of many campus Climate Action Plans. AASHE is another good resource. They provide support for sustainability staff on campuses and have a comprehensive set of materials at www.aashe.org/resources.

The National Wildlife Federation's Campus Ecology Program has a great database of resources that includes a how-to guide for climate action planning and ton of campus case studies around sustainability: <http://www.nwf.org/Global-Warming/Campus-Solutions/Resources.aspx>. (Also see the campus resources at Clean Air Cool Planet: http://www.cleanair-coolplanet.org/for_campuses.php.)

To see how your local university is doing on environmental initiatives, look at the Sustainable Endowments Institute annual sustainability report card: <http://www.greenreportcard.org/report-card-2010/schools/search/152>. Bicycle programs are a part of their rating system. They note that "More than two in five schools have instituted bicycle-sharing programs. These programs encourage alternative transportation on and around campus at 46 percent of the schools."

Navigating the planning process at the campus level

Bicycling organizations have helped with campus-based Climate Action Plans. Even if your advocacy organization is not directly involved in writing the Action Plan, you can be involved to support the committee in achieving these goals. Work with the university administration, the transportation sub-committee, and student groups to support their work and get bicycling included in the plan.

1. Offer specific and measurable recommendations –

- Be aware that wording tends to get watered down to get to a consensus. It's a balance between being flexible enough to make the plan acceptable to a wide audience and determined enough to give the document teeth.
- Set interim measurements.
- Come armed with research and data.
- Have a plan to achieve specific proposed components of the plan. Well thought-out plans to achieve goals will make it easier to get recommendations included.
- Know the cost of your proposals. Officials will want to know return on investment, which can be challenging for bicycling in the short term. Talk about the life-cycle cost.

2. Talk to stakeholders –

Many different groups can be impacted by In advance and afterwards; understand their needs. Get to know the “political map” and who is likely to be on your side.

3. Communications and education –

Outreach makes people more receptive to the plan. Build public support for key aspects of the plan.

Examples

AASHE has a number of examples of Climate Action Plans:

http://www.aashe.org/resources/climate_action_plans.php

The [University of Delaware plan](#) recommends offering \$200 bike vouchers to students and faculty who agree not to purchase a parking permit, in addition to adding bike racks and upgrading the campus' bike lanes.^{lviii}

The [University of Boulder plan](#) calls the bicycling program one of the “cornerstones” of the university's transportation system.

In other efforts to curb climate change, the Massachusetts Executive Office of Energy and Environmental Affairs has compiled [campus sustainability practices](#) and included an excellent section on bicycling initiatives.^{lix} Some colleges encourage biking by giving bikes to incoming students. Ripon College in Wisconsin gives free bikes to the first 200 incoming students who agree not to bring cars to school their first year. Others create campus bike sharing programs. St. Lawrence University in New York State allows student to check out bike-share bikes with their library card for as long as two days. Then there are encouragement programs. The University of Washington sponsors a “Ride in the Rain Challenge” every January. To encourage student to commute year-round, Duke University allows bike commuters to receive one day passes to park in visitor lots when needed on rainy days or for other reasons.

Case Study: University of Pennsylvania

How the plan was made^{lix}

Responding to pressure from organized student groups, the president of the University of Pennsylvania signed the [American College & University Presidents’ Climate Commitment](#). She then set out to create a climate action plan and hire a climate action advisor (their “sustainability coordinator.”) Once hired, the sustainability coordinator recruited environmentally-minded students to create a “sustainability office” and were tasked with leading the planning.

To begin drafting the Climate Action Plan, the team created six committees, one for each of the sections of the plan: utilities and operations, physical environment, *transportation*, waste minimization and recycling, academics, and communications. The staff, faculty and students on the committees were selected to ensure that a variety of perspectives were represented. At least one of the students on the transportation committee was committed to promoting bicycling in the plan. This was a critical placement, as she was able to make sure bicycling issues remain a central part of the planning.

Once formed, the transportation committee then began a year-long process of talking. They discussed the problem and reviewed GHG accounting practices. They began to realize how much they didn’t know. Penn had never conducted a transportation survey; they didn’t count bike trip; they didn’t have a count of on-campus bike parking.

They had to start filling in the holes. Given limited resources, they relied on partners and existing sources. They reached out to the Bicycle Coalition of Greater Philadelphia, the local bicycling advocacy organization. The bicycle coalition provided reliable bike counts for nearby Walnut Street Bridge to show that bicycling was popular in the area. The committee conducted an inventory of campus bike parking. They also found out that the university was conducting a traffic circulation study to report to the trustees. The committee was able to persuade them to include questions about bicycling in the study. Having bicycling data included in the report to the trustees added credibility to the findings.

Even though everyone on the committees thought encouraging bicycling is a good idea, it was hard to get bicycling in the plan. At Penn, utilities are the largest source of GHG. Transportation was responsible for a smaller share (because it is not a commuter campus), and bicycling was perceived as a small share of transportation.

The measurement tools for evaluating Climate Action Plans is something of a blunt instrument. For example, they ask if you have a bike sharing program, they don't ask how big it is or if it is used. If they ask if the campus has 'adequate bike parking', they provide no definition of adequate. Additionally, there are environmental health impacts that are not measured by the Climate Action Plan standards. For example, Asthma-causing particulate matter levels are high at Penn, but reducing them doesn't count toward the action plan goals.

CONCLUSION

As awareness of the threat of climate change grows, policy-makers are increasingly turning to systematic strategies of promoting bicycling to reduce the need for single-occupancy car trips. This policy interest in bicycling has created an opportunity for bicycling advocates to work with states, cities, and universities to make additional and strategic investment in bicycling.

The framework of the Climate Action Plan lends itself particularly well to promoting bicycling. Most plans include VMT reduction goals and bicycling can replace many short car trips. They can also make it more politically feasible to make improvements. In New York City, for example, putting together an all encompassing climate change plan meant that no single sector appeared to be disproportionately targeted. It would have been more difficult to make a separate case for clean transportation, water, parks, and sustainable housing and buildings one at a time. It is an easier sell to show that the whole range of solutions will be included in the plan. The crisis of climate change is so serious that policymakers must use every policy tool – including bicycling – to address it.

Opportunities exist at all levels – state, city, and university – to incorporate bicycling into Climate Action Plans. However, as this report illustrates, there are challenges as well. It is a commitment of time and energy. It can difficult to quantify impacts and costs. And progress can be slow. Nonetheless, by understanding the process, building relationships with the right people, contributing concrete, quantifiable, and proven ideas to the plan, cultivating the support of the public, and promoting implementation of the final product, bicycling organizations can ultimately help shape a plan that will strategically promote bicycling.

Contact us: Let's work together

Contact the League of American Bicyclists and the Alliance for Biking & Walking for more information on making bicycling a bigger part of your area's Climate Action Plan. Members of the Alliance should share their experience and ask questions on the People Powered Movement listserv, people@peoplepoweredmovement.org. Also follow the listserv to find out about presentations on the topic.

Contact:

Darren Flusche

Policy Analyst, League of American Bicyclists

202-822-1333 X235

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^{lv} The City of New York's *Active Design Guidelines*,
http://www.nyc.gov/html/ddc/html/design/active_design.shtml

^{lvi} For example, UC Davis, http://www.des.ucdavis.edu/faculty/handy/Davis_bike_history.pdf

^{lvii} American College & University Presidents' Climate Commitment,
<http://www.presidentsclimatecommitment.org/>

^{lviii} University of Delaware Climate Action Plan,
<http://www.udel.edu/sustainability/footprint/University%20of%20Delaware%20Climate%20Action%20Plan.pdf>

^{lix} Campus Sustainability Best Practices: A Resource for Colleges and Universities, *Leading by Example Program* at the Massachusetts Executive Office of Energy and Environmental Affairs
http://www.mass.gov/Eoeea/docs/eea/lbe/lbe_campus-sustain-practices.pdf

^{lx} Brittany Bonnette Interview, June 25, 2010