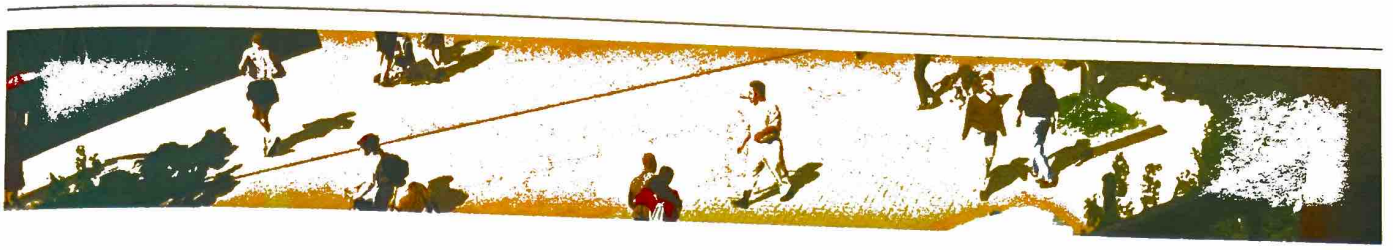

9

Policy and Program Recommendations

Climate stabilization will require the United States to reduce greenhouse gas (GHG) emissions by 60 to 80 percent below 1990 levels by 2050. To keep the nation moving along that critical path, our GHG emissions will need to be well below 1990 levels by 2030, and leading analysts believe we have less than ten years, and possibly less than five years, to get on track (Bierbaum 2006). In the transportation sector, progress will be required on all three legs of the policy stool: vehicle efficiency, fuel content, and vehicle miles traveled (VMT). The national policy discussion on vehicles and fuels is mature and active, and a variety of proposals would have the automobile and oil industries take responsibility for their contributions to GHG. Thus far, however, no one has been put in charge of reducing the GHG impacts of VMT growth.

In this chapter, we aim to identify the roles and responsibilities of different levels of government to meet the climate challenge. Civic leaders, consumers, businesses, and other stakeholders also can make substantial contributions to this effort.

The key to making substantial GHG reductions is to get *all policies and practices, funding and spending, incentives, and rules and regulations pointing in the same direction,* toward smart growth and away from sprawl. Currently, most of these instruments are pointed toward sprawl, creating conditions that lead to ever-increasing GHG emissions. One example is the link between federal transportation funding and VMT levels, which rewards states for VMT growth (FHWA 2006). Another example is the low-density zoning that keeps localities dependent on cars, undermining public expenditures on transit, pedestrian, and bicycling facilities.

A MIGHTY CHALLENGE

The current mismatch between what exists and what is necessary to achieve meaningful VMT and GHG reductions highlights the enormity of the challenge and focuses attention on the need for bold initiatives. Incremental policy changes will not suffice. Only profound, systemic change will do. "Make no little plans," Daniel Burnham admonished a century ago. "They have no magic to stir humanity's blood and probably themselves will not be realized" (Moore 1921). Burnham's advice could not be more appropriate to the task at hand.

Our recommendations draw on the analyses in earlier chapters, most notably Chapter 4. That chapter makes clear the priority order of development if GHG emissions are to be substantially reduced. From a climate perspective, the best development is highly accessible to existing urban centers, served by transit, and dense, diverse, and well-designed. Such development has all 5D variables (discussed in Chapter 4) going for it. The next most climate-friendly development is highly accessible to existing urban centers and transit, but lacks one or more of the other Ds.

With 120 million additional Americans projected for 2050, it is not realistic to expect all development and redevelopment to take one of these forms. Inevitably, greenfield development will continue in suburban settings. But this development need not take the form of suburban sprawl. It can be dense, diverse, and well designed. Even in the absence of transit, it can be walkable, and can render many automobile trips much shorter than those in suburbia today.

Federal Policy Recommendations

The federal government plays a powerful role in shaping growth patterns and travel choices through regulations, funding, tax credits, technical assistance, and other policies. To accomplish the emissions reductions discussed in this book, we recommend the implementation of the following major federal policies.

Adopt a "Green-TEA" Federal Transportation Act

Approximately every six years, Congress reauthorizes the nation's federal transportation planning and funding legislation. One advantage of having to reauthorize transportation statutes so frequently is that each reauthorization has the potential to match the needs of the nation at that time. Past transportation statutes have focused on linking the nation with interstate highways (1956), providing for mass transit (1964), facilitating metropolitan planning (1973), and promoting system efficiency (1991) (Weiner 1999).

In 1991, Congress began the process of policy change by adopting the Intermodal Surface Transportation Efficiency Act (ISTEA), altering the ways that transportation planning and funding would occur in this country. Although these changes were largely carried forward in subsequent legislation—1998's Transportation Equity Act for the 21st Century (TEA-21) and 2005's Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—the latter statutes did not build on the foundation laid by ISTEA.

As outlined in this book, the most pressing current need is to stabilize the climate for the future economic and environmental well-being, not only of this country, but of the entire planet. With the reauthorization of SAFETEA-LU slated for 2009, the time has come for the next transformation in how we think about, plan for, and fund the nation's surface transportation system. The reauthorization will allocate approxi-

mately $300 billion, representing by far the largest category of federal infrastructure spending. How this spending is allocated, and what planning requirements accompany it, will have a profound impact on the nation's future VMT and GHG emissions. In a very real sense, transportation policy *is* climate policy. To meet the current need for VMT and GHG reductions, we suggest that the next surface transportation act build on the acronyms of the previous two statutes and be dubbed "Green-TEA" (Center for Clean Air Policy 2007). We further suggest that this new statute incorporate the following changes in law.

Establish National Goals for Transportation. Traditionally, federal transportation legislation has parceled out federal dollars to the states. Planning came late to the system, with the first mandates for long-range planning in metropolitan areas appearing in 1962; parallel requirements for states did not exist until 1991 (Weiner 1999). Even then, the emphasis was, and remains, on planning procedures, not outcomes. States and metropolitan planning organizations (MPOs) are required to incorporate certain "planning factors" into analyses used to develop long-range plans, but the requirement is couched in permissive language: states/MPOs must *consider* the specified factors. No particular result must be achieved or standard attained. The reality—that these planning factors are mere suggestions—is further cemented by language barring anyone from suing a state or MPO for failing to consider the factors (23 U.S.C. §§ 134(h), 135(d)). States and MPOs must certify to the U.S. Department of Transportation (USDOT) that they considered the planning factors, but oversight and enforcement of even this modest requirement are weak.

Given that most other federal programs that allocate funds to state or local governments—including those for education, public housing, and welfare—contain performance-based requirements, it is rather remarkable that transportation funding (with some exceptions) is more or less a blank check. It is time for transportation to incorporate performance standards as well. Performance- or goal-based planning is not new. Land use planning statutes in many states contain substantive standards that local plans must meet. In one of the better-known examples, the state of Oregon has articulated 19 goals that cities and counties must advance through their comprehensive land use plans (Oregon Department of Land Conservation and Development 2007).

A similar structure should be included in Green-TEA. The statute should articulate a national vision for transportation—one based on climate stability—and define a set of national goals and objectives. To ensure attainment of these goals and objectives, Green-TEA should require that all planning documents—including state and MPO long-range plans and transportation improvement programs, project-level environmental impact statements, and MPO certifications—demonstrate compliance with these goals and objectives. The U.S. Environmental Protection Agency (EPA), in consultation with the USDOT, should be put in charge of reviewing planning documents for compliance and should be given the enforcement tools necessary to guarantee compliance.

There are many goals that could be incorporated into a performance-based transportation planning system. Naturally, a planning system that has climate stability as its main goal should give highest priority to reductions in GHG emissions and VMT. Additional goals would prioritize repair and rehabilitation over new construction ("fix-it-first"), ensure seamless intermodal transfers, and provide for "complete streets" (see "Adopt a Statewide Complete Streets Policy and Funding Program" later in this chapter). Further goals are suggested by current metropolitan and state planning factors: economic vitality, safety, security, accessibility, mobility, environmental enhancement, energy conservation, operation and management efficiency, and system preservation (23 U.S.C. §§ 134(h), 135(d)).

Use Funding Formulas that Provide Incentives for VMT Reduction. Discussions of transportation policy frequently focus on the need for additional revenues to meet growing needs. Rarely is the alternative of balancing resources and needs by reducing demand seriously considered. This alternative can and should be pursued through Green-TEA.

For many decades, transportation funds have been allocated to states based, in large part, on VMT, fuel use, and lane miles (Federal Highway Administration 2006). The more of each factor a state can demonstrate, the more funding the state will receive, thereby allowing the state to build more lane miles, which in turn encourages more VMT (see Chapter 6). More VMT results in increased state gas tax revenues, further exacerbating the perverse spiral of revenue generation, facility expansion, and VMT growth. Obviously, one of the results is ever-increasing GHG emissions.

Funding allocation systems need to stop rewarding VMT growth and start rewarding measures that reduce travel demand and emissions. The original ISTEA legislation, as passed by the Senate in 1991—far ahead of its time—offers a model of how federal funding could be transformed to a performance-based system (S. 1204 § 106(b), June 19, 1991). This legislation would have created an Energy Conservation, Congestion Mitigation, and Clean Air Act Bonus program. A state's funding allocation would have been reduced if it showed a 10 percent or greater increase in VMT per person over an established base year. The withheld funds would have been pooled to provide bonuses to states achieving a 10 percent or greater decrease in VMT per person. Such a program could be administered either through state allocations and metropolitan suballocations or, better still, through direct allocations to MPOs (as described below).

Level the Playing Field for Transportation Choices. Prior to the passage of ISTEA, funding and planning processes essentially tipped the decision-making scales in favor of new road projects. Faced with a given transportation need, state and metropolitan decision makers could choose to address that need with new or expanded roads, which would receive 80 or 90 percent funding from the federal government, or

they could address the need with transit, which would receive far less federal funding, often as little as 50 percent. Although ISTEA allowed for the equalizing of federal funding between highway and transit projects, it did not mandate it. The actual practice of the USDOT has largely maintained conditions as they existed prior to ISTEA. Transit projects rarely receive more than 50 percent federal funding, while highway projects frequently receive 80 percent (Beimborn & Puentes 2003).

Moreover, a series of procedural hurdles gives highways an additional edge. Virtually all major (and many minor) transit capital projects must go through a "new starts" application process that requires them to meet standards for cost effectiveness, operational efficiency, mobility improvement, environmental benefit, and supportive land uses—criteria that highways do not have to meet. In addition, funds are allocated to project applicants in very different ways under highway and transit programs. Highway capital funds are distributed to state DOTs via entitlement formulas, while transit capital funds are distributed through a highly competitive discretionary grant program. Finally, unlike highway projects, transit projects are subject to intense federal oversight and postcompletion evaluation.

Of course, there are at least two ways to level the transit/highway playing field: either make transit funding conform to highway procedures or vice versa. While most commentators suggest equalizing federal funding shares at 80 percent, many point to the project selection process and criteria currently used for transit as the basis for good transportation decision making. In other words, rather than "dumbing down" transit to highway funding procedures, we could make highways "smarten up" by applying the same rigorous qualification standards and evaluation processes to highways as we do to transit (Beimborn and Puentes 2003; Katz, Puentes, and Bernstein 2003). This would not only give transit a fair shake, but would ensure that road projects meet basic efficiency and effectiveness standards.

Provide Funding Directly to MPOs. ISTEA gave MPOs new planning authority and responsibilities. It also required state DOTs to provide MPOs for large metropolitan areas with a minimum suballocation of project funds. Under the current transportation law, SAFETEA-LU, that amount is approximately 5 percent of a state's federal highway allocation (Wolf et al. 2007). As important as these changes were, they have hardly made a dent in what is an increasingly inequitable distribution of transportation dollars. Metropolitan areas contain more than 80 percent of the nation's population and 85 percent of its economic output (Puentes and Bailey 2005). Investment by state DOTs in metropolitan areas lags far behind these percentages (Hill et al. 2005).

The issue, however, is not just the *amount* of funding; it is also the authority to decide *how* the money is spent. More than one-third of the states that receive funds from the federal Congestion Mitigation Air Quality Program—funds that by definition are to be used in MPO areas—do not suballocate those funds to their respective MPOs. Only 12 states suballocate federal Transportation Enhancement Program dollars to

MPOs. The other states decide how these funds are to be spent. Even among the 5 percent of funds that are required to be suballocated to MPOs, many MPO staff members report that state DOTs wield substantial influence (Puentes and Bailey 2005).

What is necessary to remedy the long history of structural and institutional inequities is a new system of allocating federal transportation funds directly to metropolitan areas. Instead of sending federal allocations to the states and expecting the states to "do the right thing" for metropolitan areas, future federal legislation should provide for the direct allocation of project funds to MPOs, without filtering these funds through state DOTs. Moreover, the amount of the allocation should be closely linked to the proportion of an MPO's population and economic activity compared to other MPOs and non-MPO areas in the same state. Because different states have different needs for rural and interstate facilities, this formula could be adjusted on a state-by-state basis.

Direct MPO funding likely would require significant institutional changes within many MPOs, so that boards and staff will be equipped to deal with new authority and responsibility, and will be held accountable for system performance and new GHG reduction requirements. California's MPOs, such as those in the Sacramento and Bay Area regions, have significant decision-making authority and are developing GHG reduction plans to comply with state GHG mandates. They will provide important lessons for other MPOs around the country.

Require Land Use/Transportation Scenario Planning. Good planning is critical to land use and transportation reforms at the regional level. The metropolitan planning sections of Green-TEA should require integrated land use/transportation scenario analyses (as described in "Regional Growth Simulations" in Chapter 4) for all regional transportation plans. Current law requires alternatives analyses for specific large projects. However, it does not require alternatives analyses for long-range plans or improvement programs. More importantly, current law does not require consideration of alternative land use patterns or plans.

As emphasized throughout this book, land use and transportation define each other; neither can be fully understood or rationalized in isolation. The costs and benefits of alternative land use patterns and transportation investments cannot be fully appreciated on a project-by-project basis. Because both sectors—land use and transportation—function in an integrated fashion at a regional level, intelligent analysis and policymaking must occur at that level. More detailed alternatives analyses still would occur at the project level, but would be tiered, to account for plan and program analyses of regional-scale impacts. Both levels of analysis would incorporate the performance goals described above. Recognizing that this level of analysis would require more resources than most states and MPOs currently invest in planning processes, Green-TEA should substantially increase funding for regional and state planning. Funding emphasis should be given to enhancements of land use

and travel data, transportation models, scenario planning tools, visioning processes, and public engagement.

Establish a National Transportation System Administration. A half-century ago, Congress adopted the Federal-Aid Highway Act of 1956, launching the Interstate Highway System, an unprecedented engineering project that quickly changed everything about the way Americans traveled and built communities. During the same period, the nation developed and implemented a national aviation system, stitching together state and municipally owned airports into a seamless, efficient network. The nation's freight systems already were largely in place. Notably absent from the nation's transportation system is high-quality intercity passenger rail.

Passenger rail, once the exclusive purview of private railroad companies, is now the responsibility of Amtrak, the semipublic national rail agency. Aside from the northeast corridor—which extends from Washington, D.C., to Boston—Amtrak does not own the tracks on which it runs, but must purchase track rights from freight railroads. This effectively forecloses the possibility of significant upgrades to passenger rail service, especially in the critically important area of increased operating speeds. As the nation's airports become ever more congested, the price of oil continues to rise, and the climate impacts of airline travel become more apparent, it is time to get serious about a national high-speed passenger rail network.

To carry out this task, Green-TEA should create a new federal agency within the USDOT and charge it with building and operating a national passenger rail system. Ideally, the new agency would be in charge of all nationally operated passenger systems—aviation as well as rail—to ensure intermodal integration and policy consistency. Creating an effective high-speed passenger rail system would reinforce the other land use and transportation initiatives outlined in this book. It would strengthen central cities and subregional centers, further encouraging compact, infill development and discouraging sprawl. Directly and indirectly, such a system would increase transit usage and bicycle and pedestrian travel, further reducing GHG emissions.

Require Transportation Conformity for GHGs

In *Massachusetts* v. *EPA,* the U.S. Supreme Court affirmed the EPA's authority to regulate GHG emissions under the current federal Clean Air Act, and its duty to do so unless it found that such emissions were not harmful to public health and welfare—an impossibility, given the scientific evidence reviewed in Chapter 3. The obvious and best way for the EPA to respond is to extend transportation conformity requirements from criteria pollutants to GHGs (see "What is Conformity?" on the following page).

Under such a system, state and local governments would be required to adopt mobile source GHG emission reduction budgets (like the emissions budgets for other pollutants) that demonstrate reasonable progress in limiting emissions. Currently, regions that fail to develop transportation plans consistent with "reasonable further

WHAT IS CONFORMITY?

Under Section 110 of the Clean Air Act (42 U.S.C. § 7506(c)), states develop and implement air pollution control plans called state implementation plans (SIPs) to demonstrate attainment with national ambient air quality standards (NAAQS) set by the EPA at levels deemed necessary to protect public health and welfare. The Clean Air Act Amendments of 1990, along with subsequent transportation legislation, required air quality and transportation officials to work together through a process known as conformity. A metropolitan region that has exceeded the emission standards for one or more pollutants must show that the region's transportation plan will conform to applicable SIPs and contribute to timely attainment of the NAAQS. According to the regulations, a proposed project or program must not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS (62 Fed. Reg. 43780). Metropolitan planning organizations must demonstrate this conformity through their long-range transportation plans and transportation improvement programs (TIPs). Projects that do not conform cannot be approved, funded, or advanced through the planning process, nor can they be implemented unless the emissions budget in the SIP is revised.

Under such circumstances, if an MPO fails to adopt a new TIP that stays within the motor vehicle emissions budget in the SIP, the area faces what is known as a conformity lapse. During this period, the MPO cannot approve funding for new transportation projects or new phases of previously funded transportation projects except for those projects that are adopted as transportation control measures in the SIP or are otherwise exempt from conformity as air quality–neutral activities.

If an area fails to submit a required SIP by a deadline, it may face a "conformity freeze," in which it cannot approve any new projects until this deficiency is remedied. If this failure is prolonged, the area can face the ultimate sanction of losing federal transportation funding. For some metropolitan areas, this potential loss of transportation funds could amount to more than $100 million per year. While 63 U.S. areas have suffered conformity lapses, no state or region has ever lost federal transportation funds as a result of a conformity lapse, freeze, or sanctions (Center for Clean Air Policy 2004b).

progress" goals risk curbs on federal transportation funds. Withheld funds could be used to reward states and MPOs that effectively reduce per capita VMT.

Although we acknowledge that, to date, land use and transportation demand management (TDM) policies generally have not played a significant role in meeting regional conformity requirements,[1] we believe that comprehensive strategies aimed at GHG reductions would be more successful and less easily circumvented. Responsibility should be "nested" so that the federal government is responsible for the GHG impacts of federal transportation spending and state and local governments bear responsibility for the GHG impacts of their transportation spending.

Use a Cap-and-Trade System to Promote Smart Growth

Many Congressional proposals for climate stabilization would authorize a national cap-and-trade market system similar to those in Europe and under development in

several states. By placing a price on GHG emissions, a cap-and-trade system can send the right signal for reducing the emissions associated with vehicle travel (Winkelman, Hargrave, and Vanderlan 2000). Moreover, regulated parties such as oil companies will have an incentive to support policies that slow VMT growth, because actions that increase VMT will make carbon emission allowances more costly.

Investment of Cap-and-Trade Revenues. Under recent Congressional cap-and-trade proposals, carbon allowances will be worth an estimated $50 billion to $300 billion per year by 2020. A portion of these revenues could be used to support smart growth. We identify a few worthwhile uses of such funds:

- **Technical Assistance for Smart Growth Planning.** Most state and local governments have very limited capacity to implement smart growth. A portion of carbon allowance revenue could support technical assistance to MPOs and to state and local governments for improvements in planning data, models, and scenario planning tools.
- **Smart Location Tax Credits.** The federal government and many state governments currently provide tax credits for hybrid vehicles, solar technology, and other technologies that reduce energy use. The same could be done for smart growth projects that will reduce regional VMT. The federal government could direct states and MPOs to identify smart locations based on the "five D" performance criteria—density, diversity, design, destination accessibility, and distance to transit—discussed in this book. Developers of new for-sale or rental units within the most efficient locations could qualify for a federal smart location tax credit. A portion of the incentive could be used to finance affordable housing units.
- **Increased Support for Travel Alternatives.** Efficient land use patterns and rich transportation choices go hand in hand. A portion of carbon allowance value could support transit, cycling, and pedestrian infrastructure that complement compact development.
- **National Infrastructure Bank.** Infill development and redevelopment in already built-up areas is one of the most effective strategies for reducing VMT and GHG emissions. The infrastructure in many central cities and older suburbs, however, is obsolete and in need of expensive upgrades and rehabilitation. Because many of these cities lack the tax base to adequately fund such projects, national resources are needed. Senator Christopher Dodd (D, Connecticut) has introduced legislation that would provide such funding through a national infrastructure bank, which would help fund improvements in transit systems, public housing, roads, bridges, drinking water systems, and wastewater systems (S.1926, 2007).

Smart Growth Offset Projects. In a cap-and-trade system, regulated industries—like electric power generation—would be subject to emission limits and could sell any unused

emission capacity below those limits to other emitters. Although land development is unlikely to become a regulated activity, it might have a role to play in offset markets.

Offsets are projects that can demonstrate quantifiable emission reductions compared to some "business as usual" baseline. Purchasers of offsets might be regulated industries that need offsets to help them meet their emission obligations, or other interested parties, acting voluntarily, who wish to help reduce GHG emissions. Examples of this latter group include companies such as HSBC, an international banking and financial services organization, that want to become carbon-neutral for business and product-differentiation reasons; airline passengers who want to offset the carbon emitted by their travel; and organizations such as FIFA, the international soccer federation, that want to offset the carbon emissions associated with specific events such as the 2010 World Cup (Bayon, Hawn, and Hamilton 2007).

As this book documents, smart growth can substantially reduce GHG emissions compared to business as usual. As such, it should be considered as a project category in offset markets. Land development projects might be assumed to generate a certain level of GHGs under normal circumstances, but emit substantially less because of their higher density, better land use mix, or more central location. Developers could sell the difference in emissions as an offset.

One of the hurdles that will need to be overcome for this to work is the issue of bundling. Given the prevailing price per ton of carbon on most of the world's carbon exchanges, the emission reductions associated with the typical land development project are probably too small to justify the associated market transaction costs. Several projects bundled together, however, could make such a deal worth the effort. This is, after all, what happens with individual home mortgages—they are bundled into larger packages that can be bought and sold in secondary markets. The metropolitan region is probably the most appropriate scale for bundling. If a region were to outperform its GHG conformity target, it could sell its excess reductions as an offset to another region.

The rules governing cap-and-trade systems are very specific about how regulated entities can demonstrate compliance, including what types of offsets can be counted toward compliance. While those voluntarily seeking to reduce their carbon emissions are not affected by such restrictions, the effective elimination of the compliance-bound entities would substantially undercut the marketability of a particular offset type. Granted, the smart growth offset market is untested, but so are many of the other components of cap-and-trade systems. As Congress and various states consider adopting cap-and-trade systems, they should avoid restrictions that would preclude the use of smart growth projects as offsets.

Place More Housing within Reach

In general, the cost of housing declines with distance from job centers and other desired destinations. When the cost of gasoline was low, this led many households to seek housing far away from where they ideally would have lived, driving until they qual-

ified for mortgages. With rising gasoline costs, however, the financial tradeoff between a longer commute and cheaper housing is changing (Lipman 2006). Living in a convenient location with transportation choices is becoming a more important aspect of affordability (Bernstein, Makarewicz, and McCarty 2005). Much of the need for housing during the next 30 years can be met within walking distance of the nation's 4,000 transit stations (Center for Transit-Oriented Development 2004). The challenge is to match affordable housing with transit availability.

Federal housing programs need to be better targeted. Take the Low Income Housing Tax Credit (LIHTC), the country's largest rental housing assistance program (U.S. Department of Housing and Urban Development 2008). The criteria governing the location for LIHTC-supported projects do not include access to transit (Gustafson and Walker 2002). In Washington, D.C., for example, only 6 percent of LIHTC housing units are located within walking distance of Metrorail stations (Rube 2008). With transportation costs now consuming more than 40 percent of income for households in the lowest-income quintile (Bureau of Labor Statistics 2001), proximity to high-quality transit needs to become a major factor in LIHTC allocations.

State Policy Recommendations

Traditionally, major U.S. public policy initiatives have originated at the federal level, with states and local governments providing implementation muscle and expertise. This has been especially true in the areas of environmental protection and public health. With respect to climate change, however, the federal government has chosen not to take a leadership role, effectively ceding that role to states and localities. More than half of the states—29 at last count—are filling this vacuum by creating their own plans to reduce GHG emissions. One-third of the states have set GHG reduction targets, and many more are in the process of doing so. Some states have taken the additional step of banding together in multistate compacts to create cap-and-trade programs (Regional Greenhouse Gas Initiative 2005; Western Climate Initiative 2008).

State climate control plans in New York, Connecticut, and Massachusetts include comprehensive VMT-reduction recommendations, although their experiences in implementing these plans have been mixed (Center for Clean Air Policy 2003, 2004a). The state of New York requires MPOs to report the GHG impacts of federally required transportation improvement programs and long-range transportation plans (ICF Consulting 2005). Connecticut created an Office of Responsible Growth to promote transit-oriented development, provide transit alternatives, encourage walkable communities, and target state funding to support development in designated "responsible growth" areas (Rell 2006). In California, a working group created by the state energy commission has established a set of policy recommendations on land use and climate change based on a comprehensive review of state and local efforts (California Energy Commission 2007).

Our recommendations for state policies build on many of these programs, focusing on land use strategies to reduce VMT and GHG emissions. As formulated, they can either stand alone or be integrated with future federal climate policies, such as those outlined in the preceding section. We recommend that states pursue all of the following policy changes.

Establish GHG Plans that Include Targets for VMT Reductions

Regardless of whether the federal government acts to reduce GHG emissions, states can and should develop GHG reduction plans that include targets for reducing vehicular travel (VMT). To be effective, these VMT targets need to be suballocated among regions and localities within the state. Metropolitan planning organizations and local governments then would develop plans to achieve the targets, using strategies that best fit their communities. The state would review and rate the regional and local plans for compliance with overall state goals and suballocated targets.

The Washington State Commute Trip Reduction program provides an example of how this system might work. The program, which is focused on reducing single-occupant vehicle commutes and GHG emissions, sets targets for reductions in single-occupant vehicle commutes and VMT per commuter. Local jurisdictions then must set goals that are at least equal to the state goals and create plans for achieving the target measures (Washington Administrative Code 468-63-030). Another example is New Mexico's recent requirement that state-funded comprehensive plans include an analysis of and a reduction plan for GHG emissions related to land use, economic development, housing, and transportation patterns.

Align State Spending with Climate Goals and Plans

Once local and regional VMT reduction plans are approved, states should align spending programs to support plans and reward successful local implementation efforts. All discretionary spending programs, whether funded directly by the state or through federal grants, would be considered in this realignment. Particularly important are programs with direct ties to land development, including those in housing, economic development, infrastructure, water and sewer systems, schools, transportation, and recreation.

Once identified and pooled, these discretionary funds could provide a significant incentive for counties and municipalities. When Massachusetts adopted this approach for its Commonwealth Capital funding program, discretionary funds totaled roughly $500 million within an annual state budget of $27 billion. To allocate these funds, Massachusetts uses a scorecard system to assess the consistency of local policies and implementation actions with state sustainable development goals. This incentive has led to hundreds of changes in local plans and zoning ordinances statewide.

In addition to its capital funding program, Massachusetts provides financial incentives for the establishment of smart growth zoning districts. To qualify, an area

must meet certain minimum density, affordability, and location requirements. The program tightly links spending with results: communities get some funding when they make initial zoning changes, and additional funding when smart new development projects are built. A companion statute guarantees that the state will cover any additional costs incurred by a local school system as a result of housing construction in a smart growth zoning district.

The California Infrastructure and Economic Development Bank's Infrastructure State Revolving Fund Program uses a similar state scorecard system. This program rates applications on a 200-point scale. Preference is given to projects that are in or adjacent to already developed areas or areas with high unemployment, and to projects that contribute to public transit use and downtown revitalization.

One of the most comprehensive structures for aligning state spending with smart growth goals is Maryland's Smart Growth Funding Areas system. Enacted in 1997, the system restricts development-related state expenditures to designated priority funding areas (PFAs), which were defined to include all municipalities as well as unincorporated areas served by water and sewer services. Areas outside the PFAs are ineligible for state funding of infrastructure or economic development. A recent report by the National Center for Smart Growth suggests the need to carefully track spending under such as system, and illustrates the implementation failures that can occur if this is not done (Knaap and Lewis 2007).

In Illinois, the Business Location Efficiency Incentive Act, passed in 2005, gives companies a small additional corporate income tax credit if a new job site is accessible by public transportation or located near affordable workforce housing. Companies seeking the credit at sites that do not initially qualify can qualify later with a site remediation plan that provides employer-assisted housing, shuttle services, pre-tax transit passes, or carpooling assistance.

Reduce "Fiscalization of Land Uses"

Local governments rely upon a variety of development-related revenue streams to fund public services. However, not all types of development generate the same amount of revenue or the same degree of service demands. There is a fiscal incentive to limit low-revenue/high-demand land uses, such as workforce housing, in favor of high-revenue/low-demand uses, such as big-box retail. Competition among localities for high-revenue/low-demand uses is fierce, often leading jurisdictions to offer large economic inducements to commercial developers. Local governments that succeed at this competition frequently fail to provide sufficient land for low-revenue/high-demand uses, effectively exporting them to neighboring jurisdictions. The result is that people must travel longer distances between affordable workforce housing and job centers, shopping, and other important services (Thomas 2006).

Local governments in a few metropolitan areas—including Minneapolis/St. Paul; Charlottesville and Albemarle County, Virginia; Davis and Yolo County, California; and

the New Jersey Meadowlands—have developed pacts to dampen these fiscal incentives and deter intraregional competition by sharing tax bases. Such arrangements often require state authorizing legislation. In California, authorization was provided recently through a ballot initiative.

There are other ways states can reduce perverse local fiscal incentives. In parts of the West where property tax caps are more common, sales taxes can be a driver of land use decisions, and reform efforts must focus on this dynamic. In Arizona, local government retail incentive packages became so large and so common that the state passed a law prohibiting them in the Phoenix metropolitan area. In many New England states, property taxes are the dominant funding source, and property tax reform is seen as a potential solution. Massachusetts now provides towns with a hold-harmless guarantee: if education costs rise because certain smart growth zoning regulations lead to an influx of families with school-age children, the state makes up the difference.

Adopt a Statewide Complete Streets Policy and Funding Program

With approximately 50 percent of trips in the United States less than three miles in length (USDOT 2001), walking and bicycling can and should provide alternatives to the automobile for many daily trips. Even for more distant destinations, walking and bicycling have a role to play as the first and last segments of transit trips. Yet, streets and highways all across America lack basic facilities for pedestrians and bicyclists. Many lack sidewalks, have lanes that are too narrow for bicycles, are dangerous to cross, lack comfortable transit stops, and are inaccessible to people with disabilities. According to a national survey of pedestrians and bicyclists, 25 percent of walking trips occur on roads without sidewalks or shoulders; only 5 percent of bike trips occur on roads with bike lanes (National Highway Traffic Safety Administration and Bureau of Transportation Statistics 2003). In short, public streets and roads are hostile environments for travelers who are not inside cars. To make other modes of transportation viable, a network of complete streets and highways is needed.

A complete streets policy would require that pedestrian and bicycle facilities be provided on all new and reconstructed streets and highways, and that pedestrians' and bicyclists' needs be considered in routine roadway operation and maintenance. For more than 35 years, the Oregon Bike Bill has done just that, requiring state and local governments to provide "[f]ootpaths and bicycle trails . . . wherever a highway, road or street is being constructed, reconstructed or relocated" (Oregon Revised Statute (ORS) 316.514(1)). Instead of using permissive language that would allow the inclusion of pedestrian and bicycle facilities, the Oregon bill mandates that inclusion, with narrowly defined exceptions. More than 50 jurisdictions at all levels of government have adopted complete streets policies in the last few years. The National Complete Streets Coalition (2005) has developed a nine-point program for complete streets, which should be the minimum standard in all states.

To create "complete communities," a complete streets policy could mandate that new streets be interconnected and culs-de-sac be discouraged so that travel distances for pedestrians and bicyclists are minimized. Again, Oregon provides useful examples. The state's Transportation Planning Rule requires all local and regional governments to adopt standards for the layout of local streets (Oregon Administrative Rule 660-12-0020(2)(b)). These standards must provide "reasonably direct routes for bicycle and pedestrian travel." Portland Metro, the Portland-area regional government, has interpreted this state provision as requiring local street plans that limit the use of cul-de-sacs and dead ends, create direct travel routes, and provide full intersections at least every 530 feet and pedestrian/bicycle accessways every 330 feet (Metro 2004, pp. 6-15–6-17). The state of Virginia is considering a similar requirement for all subdivision streets under its jurisdiction, but with specific performance standards for street connectivity.

The third component of a complete streets policy is adequate state-level funding. Oregon's Bike Bill requires both state and local governments to set aside at least 1 percent of state highway funds for pedestrian and bicycle facilities (ORS 366.514(3)). While this is a commendable base, it would be better to set funding levels commensurate with actual or desired mode shares. Approximately 10 percent of trips currently are made by bicycling or walking (USDOT 2001). A reasonable objective for 2030 is to double that percentage. To stand a chance of meeting this objective, state funding levels for pedestrian and bicycle facilities will have to be commensurate. Funding should be provided to retrofit all existing "incomplete" streets that present barriers to bicycling, walking, and transit use.

Require Analysis of GHG Emissions as Part of Planning Approvals

Following Congress's adoption of the National Environmental Policy Act (NEPA) in 1969, 13 states and the District of Columbia passed state-level "mini-NEPAs," requiring assessments of state and local actions in a manner similar to NEPA. The actions covered by these mini-NEPAs vary from state to state. In some states, such as Connecticut, the mini-NEPA affects only state agency activities. In others, such as New York, actions by local governments, including land use permitting, are covered. Although the specifics vary, all of the mini-NEPAs mandate some level of analysis and, in some cases, mitigation of actions that have significant impacts on the environment. The attorney general of California has interpreted that state's mini-NEPA—the California Environmental Quality Act (CEQA)—as applicable to GHG emissions. In a celebrated lawsuit against San Bernardino County, the attorney general asserted that CEQA required the county to assess and mitigate GHG emission impacts associated with an update of the county's general plan (see "Smart Growth and Climate Change Policy in California" on the following page).

In California, Assembly Bill 32 contains a legislative declaration that "[g]lobal warming poses a serious threat to . . . the environment of California." This declaration provides the basis for enforcement action under CEQA. Yet, even without similar

SMART GROWTH AND CLIMATE CHANGE POLICY IN CALIFORNIA

California must address VMT growth if the state is to meet its GHG reduction target pursuant to Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. California state agencies are working hard on a recipe for comprehensive policy changes to advance smart growth, cut VMT, and reduce GHG emissions. They have a rich set of ingredients with which to work, including a statewide climate target (AB 32), Blueprint Planning Grants to promote integrated regional transportation and land use planning, climate change impact assessment guidelines under the California Environmental Quality Act (CEQA), proposed legislation (SB 375) to provide incentives for smart growth planning and implementation, and some $40 billion in infrastructure bonds that could be "green-leveraged" to encourage climate-friendly development patterns. State, regional, and local officials, as well as environmental advocates and developers, are working out the details of policy design issues, including how to set and meet regional VMT/GHG targets, how to address GHGs in project and plan environmental impact reports (EIRs), and how to ensure that bond funds advance sustainable communities and GHG reduction goals.

In setting regional VMT or GHG targets, the twin challenges are to ensure that 1) regional VMT targets, in aggregate, are sufficient to help meet state GHG goals, and 2) targets are feasible in light of the unique conditions of each region, including population growth, demographic and economic trends, development patterns, and transportation infrastructure. There is an emerging sense—but no consensus—that it may be best to start with voluntary regional targets and support their implementation via technical assistance and planning support (for data and model improvements, and for scenario planning tools). As the regions' expertise and experience grows, these could evolve over time into mandatory targets, with incentives offered by attaching VMT/GHG performance conditions to allocation of transportation and other infrastructure funding.

The state already has established a precedent for requiring GHG reduction goals in regional and local plans. Last year, California Attorney General Jerry Brown, Jr., sued San Bernardino County on grounds that the county violated CEQA by not adequately addressing climate change impacts in its general plan update EIR. The parties subsequently reached a settlement wherein the county agreed to prepare a plan that will include a GHG emissions inventory and emissions reduction targets. Although it is temporarily barred from filing further lawsuits until the state provides more direction on climate change impact assessment in its CEQA guidelines (to become effective January 1, 2010), the attorney general's office continues to comment on general plan, regional plan, and development project EIRs, recommending further analysis and specific impact mitigations.

Today, all eyes are on California. Smart growth and climate change policy development in this state will offer important insights and models for other states and the federal government.

legislative pronouncements in other mini-NEPA states, the scientific evidence regarding GHG emissions and climate change—much of which is summarized in Chapter 3—argues for environmental assessments of GHG emissions.

While generally positive, mini-NEPA compliance can be costly. In states where a mini-NEPA covers private land development activities, the cost of compliance can negatively affect housing affordability. California is now considering legislation (Senate Bill 375) that would provide partial or full exemptions from CEQA compliance for compact development meeting specified standards. This combination of policies—generally requiring GHG assessments for development proposals, while exempting qualified compact developments—would give compact developments a significant edge in the real estate market. It is a model that could be duplicated in other mini-NEPA states.

Regional Policy Recommendations

Success in meeting our climate challenge will require cooperation across state and city boundaries. Minnesota's Twin Cities and their suburbs provide an example of regional coordination to tackle regional problems. When the state legislature created the Metropolitan Council in 1967, the region—which had 272 separate local units of government—was plagued by inadequately treated sewage, a deteriorating bus system, and rapid loss of open spaces. Making the situation worse, many communities lacked the funding to tackle these problems (Metropolitan Council 2004). Since its creation, the Metropolitan Council has contributed to the Twin Cities's reputation as a green, livable, vibrant region. This regional approach is now helping the Twin Cities reduce global warming pollution.

Although regional agencies like the Metropolitan Council are still rare in the United States, every medium and large metropolitan area has an MPO. Congress required the establishment of MPOs in the 1970s as a condition of federal transportation funding. These agencies often are also councils of governments (regional councils) that coordinate and assist their local cities and counties in addressing regional concerns. In some states, MPOs are now involved in land planning as well as transportation planning. MPOs are the logical entities to carry out many of the policies recommended in this section. They will need to be given enhanced powers and resources, consistent with the new duties assigned to them, and become more accountable for regional outcomes. Their governing bodies will need to be representative of the regions they serve, with cities and suburbs represented according to population. It would be best if MPOs operated as part of broad-based, multiservice regional councils.

Include Climate Goals in Regional Transportation Plans

Regional long-range transportation plans are the blueprints that guide investment in a region's transportation system. Including GHG and VMT reduction targets in these

plans will help ensure that transportation investments contribute to climate protection. In California, MPOs, state agencies, and the state legislature currently are considering incorporating GHG reduction targets into long-range transportation plans to comply with AB 32, the California Global Warming Solutions Act of 2006.

Give Funding Priority to Compact, Transit-Served Areas

Metropolitan planning organizations could give funding priority to compact, transit-served areas where development will help reduce GHG emissions. In concert with local governments, MPOs would designate "priority funding areas" where local governments have planned for compact development.

In the Twin Cities, the Metropolitan Council's 2030 Regional Development Framework seeks to encourage infill of "developed communities," those in which more than 85 percent of the land is developed and infrastructure is well established. To advance this goal, the Metropolitan Council administers the Livable Communities Act (LCA), which underwrites grants for brownfields cleanup, affordable housing, and mixed-use projects, and is funded through a metro-area property tax (EPA 2003). This voluntary program has engaged more than 100 communities in the seven-county metropolitan area, leveraging billions of dollars in private investments as well as additional public investments.

The San Diego Association of Governments (SANDAG) has developed a smart growth concept map in concert with local governments. For a share of incentive funding, local governments have been willing to designate smart growth areas and accept more growth and density. Incentive funds will amount to $240 million through the year 2040. To be designated, an area must currently meet minimum density and transit service standards, or have planning and zoning in place that will lead to such densities. Because funds for the program come from a regional sales tax, qualifying areas can use the money for a wide range of improvements, not just those directly related to transportation. Areas that do not yet have the necessary planning and zoning in place can apply for planning grants to complete plan and code changes that would qualify them for infrastructure funding (SANDAG 2006).

Similar programs are in place in the San Francisco Bay Area, the Sacramento area, and Portland, Oregon. In these regions, however, because federal transportation funds are used (primarily CMAQ and enhancement funds), qualifying projects have to be transportation related.

Redirect Transportation Funds from Road Expansion to Transit and Bike/Pedestrian Facilities

Metropolitan planning organizations should redirect transportation resources in order to develop top-notch infrastructure for nonauto travel modes. Shifting investment away from road expansion toward transit, bicycling, and walking facilities can lead to better climate outcomes, not only by encouraging the use of alternative modes

of transportation but by moderating induced traffic and induced development (see Chapter 6).

The Sacramento Area Council of Governments (SACOG), which is responsible for coordinating the planning of 22 cities and six counties in the Sacramento area, was dissatisfied with the projected outcomes of its 2025 Transportation Plan. Under the plan, it was projected that VMT would continue to outpace population growth, transit ridership would increase only marginally, and the nonmotorized (walking and bicycling) mode share would decline.

The SACOG 2035 Plan sought to reverse these trends. It focused on four performance indicators: VMT, congestion and delay, transit ridership, and nonmotorized travel mode share (SACOG 2007). Out of a total spending package of $41.7 billion, the 2035 Plan earmarks $14.3 billion for transit and $1.4 billion for bicycle and pedestrian projects. Projections show that VMT growth through 2035 will fall from its historic growth rate of 2.5 percent per year to 1.4 percent per year. The VMT growth rate is projected to be lower than the population growth rate of 1.6 percent (SACOG 2007, p. 4-4). This plan also will save money. A recent SACOG study found that infrastructure costs an average of $20,000 less per housing unit for compact development than for sprawl.

Use Land Use/Transportation Scenario Planning to Evaluate Growth Options

Land use/transportation scenario planning, once considered "state-of-the-art," should become state-of-the-practice everywhere. In regional scenario planning, one future scenario represents "business as usual" or a continuation of current growth trends, usually some variant of sprawl. Other scenarios usually represent more compact and transit-oriented development patterns. Scenarios are run through regional travel models and other performance assessments. Scenario planning helps clarify the costs and benefits of alternative development patterns. It helps identify options available to communities in the region, the different investments they will require, and the tradeoffs involved.

Scenario planning has been conducted all over the country (see "Regional Growth Simulations" in Chapter 4). One of the best examples is the Sacramento Region Blueprint Transportation–Land Use Study, which used an extensive public outreach process, cutting-edge Internet-accessible planning software, and a detailed business-as-usual baseline growth forecast to help participants explore alternative growth scenarios through 2050. The "preferred scenario," ultimately adopted, features infill development and transportation investments that will produce 12.3 fewer daily VMT per household by 2050, a 26 percent reduction below the baseline (SACOG 2005).

Other well-known scenario planning studies include Portland Metro's Region 2040, which began in 1992 and was the first large-scale scenario planning exercise in the nation (Metro 2000), and Louisiana Speaks (2007), which was launched to help coastal communities craft redevelopment plans after Hurricanes Katrina and

Rita. There are numerous examples of visioning and scenario planning that have not led to changes in development patterns (Bartholomew 2007). Those that have been successful were backed by political will and the resources required to continue the process after the initial public participation is complete.

Under a GHG conformity requirement (see "Require Transportation Conformity for GHGs" earlier in this chapter), regions such as Sacramento and Portland would be able to use their interactive transportation and land use models to develop land use and transportation scenarios that achieve VMT reduction targets, and limit investment to transportation projects that comply with the "constrained" plan. Coordination will be more difficult in the many regions without integrated land use and transportation models.

Establish a Regional Transfer of Development Rights Program

Transfer of development rights (TDR) programs enable landowners to sell their development rights to other landowners through a market-based system. Such programs have long been used to help protect farmland and open space by shifting development rights from such lands to areas designated for higher-density development. Effectively crafted, TDR programs can help reduce VMT by directing growth to compact, transit-served areas and away from low-density greenfield sites, thus reducing the need for long-distance travel.

Taxpayers benefit from TDR programs because they cost less than outright government purchase of open space or farmland. The programs also are generally popular with citizens in rural areas because they compensate rural landowners for the development potential of their land. While TDR programs typically are administered by local governments, a regional TDR program could have greater impact because it would encompass more rural and urban areas than a local program. Montgomery County, Maryland, located just north of Washington, D.C., has a large subregional TDR program that has protected nearly 51,000 acres of farmland in the past 25 years. Regional TDR programs exist in the New Jersey Pinelands and the Lake Tahoe area.

Create a Carbon Impact Fee for New Development

Cheap land and subsidized infrastructure make suburban and exurban development less expensive than urban infill. Regulatory reforms alone cannot overcome this advantage. For decades, governments have charged impact fees on new development to offset the costs of schools, libraries, sewers, parks, and transportation. Creating and implementing a regional CO_2 emissions impact fee would internalize carbon impacts into development costs, thereby rewarding best development practices and raising the price of carbon-inefficient development. Coupled with a TDR program as described above, an impact fee would require exurban landowners who developed their land to pay, while exurban landowners who stewarded their land would get paid. Fee revenues could be used to help fund transit, bicycling facili-

ties, sidewalks and other pedestrian amenities, and other smart growth projects in compact areas.

Although novel, such a fee would not be the first instance of an emissions-based development impact fee. The San Joaquin Valley Air Pollution Control District in the Fresno, California, area imposes a fee on new development to fund mitigation of several transportation-related air pollutants and to encourage developers to build projects that minimize emissions. The program, which applies to all development above a minimum size, assesses fees for the estimated ten-year total emissions associated with the development. The fees, which in 2007 were $7,100 per ton for NOx and $5,594 per ton for PM10, are based on the cost of offsetting emission reduction strategies.

The incentive part of the San Joaquin program provides fee reductions for project features that will reduce transportation-related emission rates below base levels. These features include proximity to retail, a balance of jobs and housing, proximity to transit services, high intersection density, and the provision of sidewalks, bicycle lanes, and long-term bicycle parking. In 2006/2007, the district collected nearly $13 million in fees and spent more than $9.5 million on emission reduction projects. These projects resulted in emission reductions of 824 tons of NOx and 34 tons of PM10 (SJVAPCD 2007).

The San Joaquin program could be adapted for CO_2 emissions. Using the project-level simulation techniques outlined in Chapter 4 and borrowing elasticities from disaggregate travel studies discussed there, policy makers could craft a reasonable system for calculating project-level CO_2 emissions.

Enhance Regional Travel Models to Account for Land Use/Travel Interactions

Conventional regional travel models used in long-range transportation planning are unable to access the full impacts of the development patterns advocated in this book. They cannot account for the effects of density, diversity, or design on travel distance or mode choice. Most models disregard the possibility of walking or bicycle use on short trips, assuming instead that all trips are by motor vehicle. They predict travel between "traffic analysis zones," which usually are based on divisions of census tracts, leaving intrazonal travel poorly represented. As a consequence, these models underestimate the potential of smart growth to reduce VMT and GHG emissions.

Some MPOs have developed more advanced travel models that overcome these limitations. The Metropolitan Transportation Commission (MTC), the MPO for the San Francisco Bay Area, includes both walk and bicycle modes in its model, basing projections for these modes on such factors as travel time and employment density (for work trips). The MTC model also includes a wider variety of trip purposes than the typical travel model. Montgomery County, Maryland; Portland, Oregon; and Sacramento also are among the handful of regions with enhanced models. Planners in leading regions are beginning to use a new generation of activity-based travel models that

simulate the travel of individual households. These microsimulation models overcome the limitations of travel analysis zones and also provide improved accounting of VMT and congestion.

Assist Local Governments with Land Development Reforms

Rewriting local land development codes to encourage more climate-friendly growth requires significant expertise and funding, which many communities lack. The EPA Smart Growth program, which runs a technical assistance program for localities, receives more than 60 applications a year for five or six grants. Regional governments as well as states should take the lead in helping communities bring their development regulations into the 21st century.

In the Bay Area, the MTC provides $7.5 million in Transportation for Livable Communities planning grants for local governments to plan and zone for transit-oriented development. The program provides grants of up to $750,000 to fund transit station area plans, zoning ordinances, and other land development guides designed to boost transit ridership and reduce VMT (MTC n.d.). The MTC also provides funding for capital improvements and may expand eligibility to include such unconventional projects as land banking for affordable housing. The Sacramento MPO, SACOG, has a similar program.

Local Policy Recommendations

More than 780 U.S. mayors are signatories to the U.S. Conference of Mayors Climate Protection Agreement (Mayors Climate Protection Center 2007), and about 600 have signed on as "Cool Mayors" with the Mayors for Climate Protection program (2008). Both programs commit cities to meeting the Kyoto target of emissions 7 percent lower than 1990 levels by the year 2012. Counties, too, are taking action under a "Cool Counties" campaign launched by the Sierra Club in partnership with King County, Washington; Fairfax County, Virginia; and Nassau County, New York. Concrete actions that localities can take are outlined in this section.

Develop a Local Climate Action Plan

To meet these commitments, many cities and counties are developing climate action plans. The best of these plans create a baseline inventory of GHG emissions from various sources, such as transportation, land use, energy use, and solid waste; identify actions and policies needed to reduce emissions from each source; set reduction targets, with benchmarks along the way to track progress; create a budget for what is needed to achieve the reductions; and identify potential funding sources to pay for improvements.

The Seattle Climate Action Plan (2007) has all these elements. With GHG emissions from transportation making up about 60 percent of the total, the city sees transportation as its biggest challenge. The city's plan incorporates transit service expansion,

PlaNYC: GREENING THE CITY

The average American is responsible for annual emissions of 24.5 metric tons of CO_2. Residents of New York City, however, are responsible for only 7.1 metric tons of CO_2 per year, less than one-third the national average. New York City is more energy efficient for two key reasons: a more efficient transportation system and more efficient buildings. Two-thirds of New Yorkers take transit or walk to work; fewer than 5 percent drive to work in the central business district. And almost no one drives to the store to pick up a quart of milk or to the gym to ride a stationary bicycle. The city's multifamily, mixed-use buildings share walls and use less energy than freestanding structures.

New York City's savings opportunities are not maxed out. Building upon an already efficient footprint, PlaNYC sets a goal of reducing citywide carbon emissions by 30 percent below 2005 levels. An annual GHG emissions inventory will track progress toward this goal. The city will address growing congestion on roadways and transit lines by expanding transit services, improving cycling and pedestrian infrastructure, and significantly increasing the availability of affordable housing near workplaces. The proposed revenue-raising mechanism, a congestion pricing program, would cut traffic and air pollution by more than 10 percent, while raising some $400 million to $500 million per year to be invested in transit. If this congestion pricing plan is approved by the city council and the state legislature, New York City will receive $350 million through an Urban Partnership Agreement with the U.S. Department of Transportation. Importantly, the city has attracted a dream team of experts and advisers from the private, public, and nonprofit sectors to develop, market, and implement the plan.

a complete streets ordinance, bicycle and pedestrian master plans, a commercial parking tax, a traffic calming program, and a "center city strategy" that promotes growth in the downtown and adjacent neighborhoods. The plan's well-defined benchmarks and reporting requirements help to hold city government accountable. Charlotte, North Carolina, has a Transportation Action Plan with essentially the same elements.

Change the Rules of Development

Some of the biggest impacts on VMT can be achieved through changes to local land development policies. Many communities have not overhauled their zoning and subdivision ordinances since they were created in the 1950s or 1960s, when they were designed to separate land uses, maintain low densities and large setbacks, ensure plentiful parking, keep streets wide, and save money by limiting sidewalks. Communities need to examine their development rules to determine if and how these rules should be changed to meet GHG reduction targets. They should include in their review the following items:

- zoning codes;
- subdivision regulations;
- street design standards;
- parking standards;

- annexation rules; and
- design guidelines.

Tools such as scorecards and zoning code audits are available to help in this review process (Smart Growth Leadership Institute 2006). New models such as form-based codes and smart codes are readily adaptable from other localities or from national models.

Favor Smart Growth Projects in the Approval Process

Once communities have reformed their codes to allow smart growth, they should make it easier for such projects to gain approval. Predictability in the approval process is valuable to everyone concerned, including local government, citizens, and developers, for whom time is money. Laying out the guidelines and rules for what local government seeks in the way of development makes the process more predictable and fair, as does defining the benefits developers will derive from meeting or exceeding a community's VMT reduction targets.

One way to favor compact development is to provide incentives. If development projects meet or exceed a community's targets, developers can be rewarded with, for example, density bonuses that allow them to build more or permitting fee waivers that allow them to pay less. Alternatively, local governments can calculate the traffic reduction benefits of compact development and reduce, accordingly, the amount of exactions or fees for which developers are responsible.

Another way to favor compact development is to offer streamlined permitting for projects that meet specified community targets. Of course, the process still must include opportunities for meaningful public input and ensure compliance with public safety and environmental safeguards. Nevertheless, because less time spent negotiating approval processes can translate into significant cost savings for developers, the promise of faster permitting can be an effective incentive for smart growth. Orlando, Florida, has provided all of these incentives for traditional urban development in the city's southeast sector.

Adopt Pedestrian-Friendly Site and Building Design Standards

Site and building design standards, especially for commercial and institutional uses, need to provide for a comfortable and attractive environment at the sidewalk. The regional transportation plan adopted by Portland Metro requires new retail, office, and institutional buildings at major transit stops to be located no farther than 20 feet from the stop or, alternatively, to provide a pedestrian plaza at the stop with a direct pedestrian connection to the building entrance (Metro 2004, p. 6-23). The city of Portland went a step further, requiring that all new multifamily residential, commercial, and institutional structures along transit-served streets be located within 20 feet of the sidewalk. The city also banned off-street parking from the front of buildings, requiring it to be located at the side or the back of a structure (Portland Code 33.266.130). Facilitating these changes in site design are off-street parking stan-

dards that reduce the minimum amount of parking required—in some cases eliminating it entirely—and establish a maximum amount that will be allowed (Metro Code 3.07.210-3.07.220).

The Local Government Commission (2003), a California-based nonprofit, has compiled a comprehensive catalog of additional design strategies, drawn in part from the Sacramento city code and recommendations from the U.S. Department of Housing and Urban Development (HUD).

Provide for Workforce Housing near Jobs

Two leading planning researchers recently asked, "which reduces vehicle travel more, jobs/housing balance or retail/housing mixing?" (Cervero and Duncan 2006). The answer—surprisingly, since work trips represent less than 20 percent of all trips—was jobs/housing balance. In most metropolitan areas, the cost of housing declines with distance from job centers and other desired destinations, while the cost of transportation increases. Without workforce housing, people have to drive until they qualify for a mortgage or else live in substandard housing. They also have to drive until they find decent schools for their kids. With rising gasoline prices, the financial tradeoff between a longer commute and less expensive housing is changing, and the potential savings from living in a convenient location with transportation choices is becoming a larger part of affordability.

Local governments have many options for promoting workforce housing (Haughey 2007):

- allowing accessory apartments on single-family house lots;
- enacting inclusionary zoning requirements that affordable homes be built along with market-rate housing;
- enacting linkage requirements that workforce housing be provided in return for approval of offices or industrial facilities;
- offering density bonuses in return for affordable units;
- donating or selling municipal lands with workforce housing requirements; and
- creating housing trust funds that earmark revenue from multiple sources for a community's housing needs.

Invest in Civic Engagement and Education

Successful planning requires the meaningful engagement of people who live and work in the affected community. Meaningful public engagement requires that planners and decision makers actively seek out public input early in the planning process, well before threshold questions are framed or alternatives crafted. When residents are engaged in the planning process from the beginning and know that their concerns and ideas are being considered, they are more likely to support new development. Visioning processes and design charrettes are two popular techniques that localities have used in recent years to engage citizens.

One example comes from Davidson, North Carolina, where the town's planning ordinance requires developers to hold design charrettes. Involving the public at this early stage can make the approval process smoother for developers, offsetting any added costs they may incur by involving the public.

Developing a Comprehensive Policy Package

Such a comprehensive overhaul of America's development processes will be a mighty challenge. But it is on the same ambitious scale as other proposals that are being considered in the climate change debate, including efforts to switch to renewable fuels, dramatically increase vehicle efficiency, end oil imports from hostile nations, and renew investments in nuclear power.

The fact is, no huge amount of reduction will come easily, and few strategies are likely to take advantage of consumer demand as well as those discussed in this book. Most communities that have adopted land development reforms have done so for self-interested reasons, such as traffic management or fiscal health, and not because they wished to reduce greenhouse gas emissions. We are confident that these improvements to the built environment can offer win-win benefits, for communities and the global climate.