

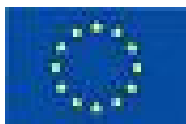
# ELEEP Policy Recommendations For Urban Development and Transportation

## Portland-Seattle Study Tour 26-31 January 2014

### **Introduction: “Urban Development and Transport”**

Ecologic Institute and the Atlantic Council of the United States co-organize the Emerging Leaders in Environmental and Energy Policy Network (ELEEP). ELEEP was created under the I-CITE project, which was funded by the European Union's External Action Service. In early 2012, the ELEEP Network was awarded additional support by the Robert Bosch Stiftung, which provided for two study tours and other events in the second half of the year. The ELEEP Network has received additional funding from the European Union under the auspices of the EU's "Transatlantic Civil Society Dialogues EU-USA 2012"; with this grant, Ecologic Institute and the Atlantic Council will conduct “The ELEEP Energy and Climate Dialogue” from January 2013 through mid-2014. In addition to a second round of funding from the European Union, the Robert Bosch Stiftung has also provided a second round of support to ELEEP through mid-2014. ELEEP is a dynamic, membership-only forum for the exchange of ideas, policy solutions, best-practices, and professional development for emerging American and European leaders working on or around environmental and energy issues. ELEEP currently has approximately 120 members, split between the US and the EU. ELEEP Members provide policy advice based on their experiences and lessons from different study tours addressing environment, climate and energy issues

Providing transportation services to the people who live and work in a city is a challenge well known to leaders in government. A well-functioning transportation system that is supported by smart land use and merges private and public modes to connect people to places is fundamental to sustained economic development, rising social equity, and a high quality environment and life in a city. Striking the right balance between different modes – private and public – and ensuring adequate funding for transportation operations and maintenance are core challenges facing municipal, regional, and state government. The policy recommendations that follow in this paper stem from lessons learned on an ELEEP study tour to Portland, Oregon and Seattle, Washington, January 2014, where participants met with political, civic, and business leadership, planners, and researchers in two cities on the forefront of transit oriented development and promoting multi-modal transportation in the United States. They are also informed by the day-to-day professional work of Members of the ELEEP Network and also a previous study tour to Paris and Stuttgart on the theme of mobility in October 2012.



ELEEP is funded by the European Union and the Robert Bosch Stiftung.

Robert Bosch **Stiftung**

## Highlights of the Policy Recommendations

Recommendation I and II are concerning the challenges of urbanization and city growth, neighborhood and transportation planning. To manage urban sprawl, ELEEP suggests the creation of urban boundaries to control sprawl and predictability for private sector developers as well as transportation planners and can reduce the need for other incentives, influence faster change and create a shared vision that results in more connected livable neighborhoods. Recommendation II made by ELEEP is a smart land-use and transportation planning with a regional agency. A robust regional agency is more effective in consolidating development and integrated transportation investments. State interferences must be avoided to provide this agency with enough authority and legitimacy. Recommendation III is facing the lack of comprehensive approach and mismanagement and imbalance between policies and infrastructure encouragement, significant, potentially low-cost opportunities to meet or exceed objectives are left on the table. ELEEP recommends a comprehensive and integrated approach to address urban transportation planning to avoid the exclusion of health, business, life quality or environment as effected topics. Every single unintended consequence in these fields should be taken into consideration of the transformation and planning process. ELEEP Recommendation VI and VII underline the need for mechanisms that require private and public sector contributions towards transportation demands management. Transportation agencies, advisers, legislative committees should use actual data for modeling local transportation needs in the future and levels of service. Recommendation VIII, IX, X are concerning the promotion and the public outreach to build up low/zero carbon ways of transportation systems. The establishment of cycling highways, intelligent infrastructure systems, and implementing of public bike sharing as well as high-speed rails between large cities are ELEEP suggested ways to archive a green transportation system of the modern city. ELEEP highlights some examples as Copenhagen, Amsterdam, London or Seville. E-mobility and inner city vehicle regulation are central ELEEP suggested strategies to achieve better air quality and reduce noise and traffic jams.

## Transportation and Transit Oriented Development Policy

**Recommendation I:** Create connected, dense neighborhoods through an urban growth boundary.

**Audience:** Politicians, planners, NGOS, businesses, transportation agencies, advisers and legislative committees

**Issue:** Urban sprawl complicates transportation planning, since development patterns are cost-driven, rather than intentionally planned for sustainable communities.

**Analysis:** According to Robert Liberty, Director of Urban Sustainability Accelerator at Portland State University, Portland deviated from the standard American path of sprawl and car-centric development in 1977, when it set an urban growth boundary, the perimeter of the city within which the vast majority of development would take place. Resources are funneled to areas within the boundary, while development outside the boundary is strictly controlled. This protects natural resources, including

forests and farmland in the surrounding rural areas, and allows for denser and more efficient land use within the growth boundary. Critical to the success of this policy is that it is legislatively established at the State level, but is determined cooperatively with City government. In Portland's case, Senate Bill 100 mandates cooperation between these two tiers of government. The State ensures enforcement of the boundary by controlling what development occurs inside and outside of it; therefore, sprawl outside the boundary does not conflict with planning inside the boundary.

Although the boundary is reviewed every 5 years and has been adjusted more than 3 dozen times since its inception, development is still actively managed. The boundary supports transportation planning by promoting denser real estate development, and thus centralizes the population in need of transportation options. It reduces the need for cars to travel long distances, opening options to alternative modes such as cycling, walking, and light rail. Likewise, development of transportation routes, in a feedback loop, promotes density and renewal in underdeveloped areas. According to Mark Huppert at the National Trust for Historic Preservation in Seattle, the streetcar is being used as an economic development tool in the South Lake Union neighborhood, where historic buildings ripe for renovation are helping to create the next residential destination. The boundaries create predictability for private sector developers, as well as transportation planners, and can reduce the need for other incentives, influence faster change, and create a shared vision that results in more connected, livable neighborhoods.

**Recommendation II:** Urban land-use and transportation planning and services should be consolidated within a regional agency with the legitimacy and the authority to carry out its mission buffered from unreasonable outside interference.

**Audience:** Federal, national, or sub-state legislators.

**Issue:** Many American and European metropolitan areas transcend the jurisdiction of a single authority responsible for transportation and land-use. Metropolitan Planning Organizations (MPO's) are required in the US, however, in some areas they lack sufficient authority and funding, and are subject to local or state interference. They often have no effective enforcement mechanism, are restricted to planning and distributing grants, and, must interface with myriad overlapping agencies responsible for implementation with competing interest for investment, growth, and tax revenue. Similar issues face many European cities.

**Analysis:** Although formed of many jurisdictions, from a transportation and development perspective, metropolitan regions function as a unit. Important decisions, such as development growth boundaries and transit service, are best made at the regional level, and ideally supported, but not interfered with, by competing interests of state or local elected officials. A robust regional agency is more effective in consolidating development and integrated transportation investments. Portland, OR provides a good base model; in many places adding powers to the existing agency may be feasible.

**Recommendation III:** Comprehensively address policy, infrastructure, and demand management in all transportation interventions and investments.

**Audience:** Elected state and local executives and legislatures in direction to implementing agencies.

**Issue:** Initiatives to improve transportation efficiency and transit options in urban areas often lack a comprehensive approach that will maximize potential benefits of the investment. Without appropriate attention and balance between policy, infrastructure, and encouragement, significant, potentially low-cost opportunities to meet or exceed objectives are left on the table. For example, tolling roadways can be an effective mechanism for encouraging transit use, but only if there is transit service available and no reasonable alternative route. Similarly, a large transit expansion may fail without a growth management policy to constrain sprawl and promote areas of dense development that support transit ridership and fare-box recovery targets.

**Analysis:** Comprehensively incorporating all the available policy, infrastructure, and demand management tools is an efficient and effective way to approach every urban mobility investment or intervention. Washington State's coupling of building a new transit and bike friendly highway 520 bridges, with tolling, and additional transit service is one example of how this recommendation could work in practice. A tool for assessing policy, infrastructure and demand management opportunities should be developed and required in all transportation projects.

**Recommendation IV:** Integrate sustainable transportation into other city agendas such as health, equity, and economic development.

**Audience:** Politicians, planners, NGOS, businesses, transportation agencies, advisers and legislative committees.

**Issue:** Without integrated planning, urban development and transportation initiatives create unintended consequences or fail to meet their objectives. For example, transportation investments may increase land-value in a neighborhood and cause displacement of poorer, incumbent residents. Access to economic and other opportunity may be deterred by lack of access to transportation facilities and the location of affordable housing. Transportation ridership and fare-box recovery revenue suffer when development occurs outside primary activity centers. Planning transportation, land-use, and social equity in isolation creates unintended consequences or misses the potential for additional public value. In addition, environmental goals may not be compelling enough to prompt a sustainable transportation agenda.

**Analysis:** In recent years, the "green" agenda enjoyed the attention of the masses, for a brief period prompting action based solely on the need to remediate environmental problems and reduce GHGs. This impetus, however, was short-lived, and currently fails to create the consensus needed to enact progressive policies that create strong communities. Campaigns taking the environmental perspective alone to encourage public transit and bike use over driving personal cars are less likely to resonate with residents, law makers, and special interests groups than those that connect transportation to other public priorities and desired outcomes. Multiple justifications for changed behavior and action appear to more sustainable, longer-lasting strategies in any case.

The Portland Plan, presented by Principal Planner for the City of Portland Bureau of Planning and Sustainability, Eric Engstrom, puts transportation in the context of "healthy connected neighborhoods" - those with easy access to food, business services, jobs, recreation, and quality housing, among other things. These elements contribute to a citizen's quality of life; transportation serves as the enabler of higher quality of life that determines what "access" means for any given neighborhood. Therefore,

reliable modes of non-automobile transportation are important to health, economic, education, and income equality agendas, in addition to resulting in environmental benefits. Engaging stakeholders in other areas and approaching development from these perspectives helps garner the support needed to advance difficult changes often prone to political or public resistance, such as new bikes lanes, car-free bridges, and pedestrian walkways. In our meetings in both Portland and Seattle, environmental issues were seldom sited as the primary driver of transportation decision-making; issues that affect populations in the short-term were more frequently the basis for cooperation between government, residents, and the private sector. Moreover, advances in health, equality, etc., often result in positive outcomes for the environment as well; there is no compelling reason to consider them separately. As the urban agenda is gradually extended to a longer-term perspective, sustainability invariably takes a head seat at the table, encompassing all quality of life issues, and allowing them to find their intersection.

## Implementation of Transportation Projects & Transit Oriented Land-Use

**Recommendation V:** Focus on ensuring implementation and respond with flexibility to challenges.

**Audience:** Local and regional politicians, city planners and transit/development agency officials, NGOs, businesses

**Issue:** Ensuring public support and buy-in for transit-oriented projects and plans.

**Analysis:** While the land use and transportation planning stage is a critical component of achieving economic development goals, the touchstone of success is the actual implementation. Ensuring that the agencies responsible for the implementation of transit and transportation projects have the human and financial resource capacity to respond and adapt to the feedback received through that implementation is key to that success. The planning stage must provide a flexible framework so that implementation can adjust to broader social or economic changes (e.g. bus ridership, residential and business development trends). Where possible, cities should explore opportunities for public private partnerships to execute transit system plan implementation.

**Recommendation VI:** Clearly articulate the vision to the public, embrace the public planning process, and encourage public participation.

**Audience:** Local and regional politicians, city planners and transit/development agency officials, NGOs, businesses

**Issue:** Ensuring public support and buy-in for transit-oriented projects and plans.

**Analysis:** To effectively implement transportation projects and developing new, transit-oriented development alternatives, politicians, bureaucrats, and local leaders must: clearly articulate the vision to the public; embrace the planning process; and encourage public participation. The broader vision is critical to providing context for each aspect of a project within affected communities. Community involvement should be actively sought and brought into the planning process as early as practicable. Identify community leaders and enlist their assistance in disseminating information about a project and

enlist their support at public meetings that will take place to discuss the project. Stress the importance of public participation in building trust between community members and planners and in identifying social, economic, and other concerns about which planners may not be aware. Prove to communities that their participation is valued and essential by adapting the vision to include their input in the final plan.

**Recommendation VII:** Create mechanisms that require private (and public) sector contributions towards transportation demand management.

**Audience:** Local and regional politicians, city planners and transit/development agency officials, NGOs, businesses

**Issue:** Ensuring public support and buy-in for transit-oriented projects and plans.

**Analysis:** Businesses that locate in areas of a city that require employees to commute by car impose different stresses on publicly maintained transportation infrastructure than businesses that locate in areas that provide employees transportation options for their commute – including public transit. A mechanism that requires the private sector to provide a transportation demand management plan involves and engages businesses in the transportation planning discussion and provides an avenue through which public transit and other non-single-occupancy vehicle modes of transportation can be encouraged. It also provides city planners with information crucial to developing future land-use and transportation development plans. This information is important for determining the costs associated with providing different areas of a city with transportation services – be it expanded highways and road maintenance, increased bus service, bike sharing systems, or new light rail capacity – and should translate into transportation pricing mechanisms that reflect the relative cost of providing those different transportation services.

**Recommendation VIII:** To improve efficiency, transportation planners and advisers should seek compare previous predictions to measured results, and adjust underlying assumptions to reflect the most current trends, needs, and opportunities.

**Audience:** Transportation agencies, advisers and legislative committees.

**Issue:** Transportation agencies use models to predict transportation needs in the future and levels of service. If these models are not checked against actual data with sufficient frequency to capture emerging trends, they encourage planning, funding, and building a transportation system for the past rather than the future. Without these interventions, this type of planning encourages the preservation of historical trends, misallocates transportation funds, and fails to advance policy goals to meet energy and environmental goals.

**Analysis:** Seeking feedback from external partners can impede groupthink, especially in agencies with low worker turnover. Comparing models to actual results will improve the accuracy of transportation planning, assist in the performance measurement, and thus support better policy and investments. This should be done on an annual basis at a minimum and by creating an advisory group of disparate, but established academic or non-profit researchers

## Information, Pollution Reduction, and Non-Motorized Transportation

**Recommendation IX:** Strengthen urban cycling share by establishing cycling highways and infrastructure, implementing public bike sharing (schemes) and promoting cargo bikes.

**Audience:** Mayors, politicians on a local / regional level

**Issue:** Towns and cities are characterized by being dense; dense in terms of people living there, the amount of employers, the diversification of people, businesses, cultures, etc. More and more people worldwide tend to live in cities. This is a challenge and opportunity at the same time. The challenge is how people can move from A to B within the shortest possible time. The opportunity is in everything being close together. Motorized traffic can be left behind and a concentration on environmental friendly and energy efficient transport modes is possible. No cars are needed in urban environments – every journey could be done by public transit, cycling and walking. Cycling has an especially high potential, because it fits perfectly for medium lengths travels (5km), is a cheap, simple, space-saving and a healthy form of travelling.

**Analysis:** Cycling cities such as Copenhagen and Amsterdam show, that a real increase in cycling share can only be achieved by a bundle of infrastructural and awareness raising measures. It is highly important to have fast and sufficiently proportioned cycling highways (e.g. in London). Furthermore bike sharing schemes in larger and medium sized cities may help to promote cycling and bring people to do their daily travels by (rental) bike (good example is the city of Seville, Spain). Special bikes, such as pedelecs, folding bikes and especially cargo bike broadens the use of cycling, for private persons (children transport, grocery shopping) as well as businesses (courier travels) (e.g. used in Nordic countries such as Copenhagen).

**Recommendation X:** In order to transform the transportation sector, expand electric mobility options, and open pathways for reduced GHG emissions from transportation, promote e-mobility in all its forms (i.e. buses, automobiles, bikes, scooters). This includes public outreach and demonstration projects and developing charging infrastructure to overcome “chicken-egg” problem.

**Audience:** City and regional politicians, city planners, NGOs, businesses

**Issue:** Our current transport system, namely our cars, are based on fossil fuels. Fossil fuel engines are large contributors to conventional pollutant emissions and climate change. All car producers are responsible for changing their technologies and investing in alternative drive-trains and other technologies to reduce pollutant emissions – including hybrid and electric technologies. Within the EU, certain fleet targets to reduce CO<sub>2</sub> emissions have to be fulfilled by 2020, in order to avoid financial punishments. The US has adopted fleet-wide emissions standards for automobiles as well. E-mobility is an opportunity to reduce emissions, noise and particulate matter in towns and cities.

**Analysis:** After much hype 5 years ago surrounding electric mobility, disappointment followed concerning the change of technology in the auto industry. Recent developments appear to be catching up with political aspirations for electric vehicles. E-mobility is starting to gain broader interest. Reliable electric vehicles are on the market (by producers such as Tesla, Nissan, BMW, Renault, VW) and different countries are subsidizing E-mobility. Range-extended electric vehicles are offered by a variety

of companies, including GM. In Norway for example, conventional cars are taxed so highly, that even the high end Tesla E-vehicle is gaining a large market segment. In Estonia a dense infrastructure of fast-charging stations was established and the purchase of E-vehicles is highly subsidized. The EU has targets to increase the fleet of electric and hybrid cars until 2020 by a significant amount. E-vehicles (also buses, scooters) and pedelecs (E-bikes) are more energy efficient than fossil fuel vehicles. They also create new industries as well as new jobs. E-mobility furthermore brings the possibility of changing people's mobility behavior to a more intermodal and less energy-consuming mobility.

**Recommendation XI:** Regulate vehicles, depending on local environmental conditions. Generally, all low-emission zones affect heavy duty vehicles, some affect diesel vans, others also affect all cars with combustion engines. Motorcycles should also be included.

**Audience:** Cities over 500,000 habitants in the US (eventually as well in the EU)

**Issue:** Implement Low Emission Zones in the center of cities. Low-Emission Zones are geographically defined areas that seek to restrict or deter access by specific polluting vehicles or only allow low emitting vehicles, such as regular or plug-in hybrids, or zero-emission vehicles, such as all-electric vehicles, with the aim of improving air quality and reducing GHG-emissions.

**Analysis:** Low-Emission Zones should be implemented in large cities and in particular in cities where fine particulate matter (known as  $PM_{2.5}$ ) exceeds WHO standards ( $10mg/m^3$ ). Air pollution is responsible for many premature deaths all over the world (approximately 310,000 in Europe each year) and affects particularly the very young and the old and those with heart and lung diseases – both common causes of death in the US. It also triggers health problems like asthma attacks and increases hospital admissions and days off sick. The human health damage that air pollution causes is estimated to be very large in the US and the EU (e.g. in the EU between 427 and 790 billion Euro/year).

**Recommendation XII:** Establish intelligent transport systems as a medium to improve multi-modal mobility in towns and cities.

**Audience:** Transport planners / Urban planning authorities

**Issue:** One main challenge in transport politics is that more and more people rely on different transport modes when doing one single journey. Intermodal transport is a future development and another trend is that less people own their own vehicle but use them by sharing and pooling models. Large cities such as Beijing in China show, that with individual mobility (private cars) the urban traffic system comes to its boundaries in terms of space (traffic congestions), pollutants (fine dust), noise, segregation, etc.

**Analysis:** Intelligent transport systems evoke high expectations when it comes to solve traffic problems in urban environments. By the use of intelligent information and communication technologies in transport, traffic can be controlled in a more efficient, ecological and secure way. Traffic warning systems, apps for planning public transit travels, city tolls (congestion charges) are examples how to influence traffic in cities. ITS are highly important for passenger transport as well as for the transport of goods.



## Regional Transit

**Recommendation XIII:** The US should invest in high-speed rail to enable a green growth agenda, which improves regional transportation efficiency and reduces stress on roadways and airports.

**Audience:** Federal and State Governments in the US

**Issue:** Investments for High Speed Rail

**Analysis:** Investments in high speed rail are frequently cited as contributing to the green growth agenda. High speed rail can compete effectively with transport by passenger car and, more significantly, air over distances up to 1,200 km, where traffic is sufficiently dense, for example between major centers of population. In general, where rail journey times can be brought close to four hours, high speed rail can be expected to take a major share of origin-destination aviation markets (Nash, 2009). Nash finds that the breakeven volume of passengers to justify a new high-speed line is very variable, ranging from 3 million to 17 million in the first year of operation, but typically even under favorable conditions at least 9 million passengers per annum will be needed. Kageson (2009) undertook a detailed comparison of CO<sub>2</sub> emissions and other environmental impacts from high speed rail and competing modes of transport. His findings point that investment in high speed rail is under most circumstances likely to reduce GHG-emissions from traffic compared to a situation when the line was not built, however the reduction is small and it may take decades for it to compensate for the emissions caused by construction. Finally, speed is a critical factor. The energy needed for acceleration is determined by the weight for the train and the final speed. This kinetic energy increases with the square of velocity as does aerodynamic resistance (UIC, 2008). Hence, moving a train at 300 km/h will require roughly four times more energy than the one needed by at conventional speeds.