

LOOKING BACK AND MOVING FORWARD: HOW TO CREATE A LEGACY OF SUSTAINABLE TRANSPORTATION IN AN EVOLVING FIELD

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ABSTRACT

In the past twenty years, federal transportation policy and funding initiatives such as ISTEA, TEA-21, SAFETEA-LU, TIGER Grants, and most recently the Partnership for Sustainable Communities have opened doors to establishing sustainable transportation policy in the United States. However, the transformative potential of these pieces of legislation has not always resulted in transformative change on the ground. A clear path to actionable sustainable transportation policy requires a change within the local and regional agencies tasked with establishing and implementing the policy.

This paper documents the incremental changes in departments of transportation and planning in seven American cities (Charlotte, Chicago, Houston, Los Angeles, New York, Portland, and Washington D.C.) that have enabled a shift towards sustainable transportation policy. Interviews with key transportation leaders in each city reveal the methods used to implement more sustainable transport and serve as a blueprint for other agencies wishing to create similar changes in their own cities.

1. INTRODUCTION

Since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, federal transportation policy and funding initiatives have slowly changed transportation policy and project development in the United States. Context sensitive solutions, multimodal design, greater emphasis on walking and cycling, and a greater awareness of how transportation impacts social, environmental and economic sustainability have become ingrained ways of planning and implementing projects in many parts of the country. Zoning codes, design guidelines, industry standards and professional behaviors continue to present challenges to sustainable mobility through minimum parking requirements, setback requirements, land use arrangements, code requirements, and other methods that defer the vision of creating a more sustainable, 21st century transportation system that best serves more compact cities and communities.

Cities such as New York City, Chicago and Portland have led the way in terms of taking policy and vision and crafting on-the-ground solutions. They offer lessons learned along this journey, as these cities have undergone a transportation renaissance and established themselves as leaders in multimodal transportation system design that connects well to compact land use patterns. These cities demonstrate how visionary leadership combined with effective planning and innovative solutions can create real and lasting change in a city's urban fabric. Additionally, the improvements being made today represent a fundamental change in the way people and cities think about their streets, moving away from the notion that streets are just for the automobile, but rather viewing streets as public spaces that should be shared by all modes of transport and play an equally important civic role that transcends beyond mere mobility. This gradual policy shift is echoed in public opinion which indicates that citizens would prefer a stronger commitment to public transportation and walking and bicycle infrastructure. A survey by Transportation for

America shows 59% of respondents support public transportation improvements (including transit, walk and bike improvements) while only 38% support new and expanded roads; and that more money should be allocated to transit than currently is funded (the mean ideal allocation is 37%, rather than the current 19% of public expenditures) [1].

This paper explores the changes within transportation and planning departments in seven cities and attempts to document the linkages between city leadership, federal policy changes, and the evolution of funding priorities toward a more sustainable and multimodal field. The approach to the research includes interviews with key agency staff from each city as well as pre- and post-interview research and analysis to determine themes in transformations. The paper documents the incremental changes in municipal planning and transportation departments that enabled this transformation, and serves as a blueprint for other agencies that seek to create similar changes in their own cities.

2. BACKGROUND

After decades of auto-oriented transportation and development policies, the nation is experiencing a shift towards multimodal transportation solutions in core areas as well as in suburban regions. This is partly a result of an urban renaissance that began two decades ago as cities re-emerged as desirable places to live, work, and play [2]. This move towards cities is expected to continue with “Generation Y,” as predicted by the National Association of Home Builders, who believe that this younger generation generally does not desire their parent’s traditional suburban home and associated lifestyle but would rather pay more to live in more walkable, active, transit accessible neighborhoods [3]. This urban renaissance is coupled with a growth in the awareness of the economic, environmental and social impacts of transportation. Some communities across the country are beginning to opt for more compact environments with multimodal transportation systems that create walkable and environmentally-conscious communities. Fuelled by a tough economic climate, environmental threats and societal desires, changes in the transportation field have also been influenced by federal funding policies. Federal funding policies are now more flexible and encourage cities to make more sustainable choices about investments in transportation systems [4].

2.1. Transportation and the Triple Bottom Line – Economy, Environment, Society

The change in the transportation field reflects the concept of the triple bottom line – the need to communicate relationships between economic, environmental and social impacts. Once a novel concept, the triple bottom line is now a standard business practice and its impacts on the transportation system in many cities is apparent.

The difficult economic climate of recent years required cities to be more efficient with limited resources; transportation systems that serve more people with less money are increasingly desirable. Cities are now required to become better stewards of limited resources, and federally funded programs have adjusted evaluation criteria to reflect this obligation. For instance, the Federal Transit Administration’s New Starts program provides discretionary funds to locally planned and implemented transit projects, with priority given to those projects that can demonstrate mobility improvements, environmental benefits, operating efficiencies, cost effectiveness, and transit supportive land use policies [5]. Transit systems that provide strong linkages between land uses and support compact land use patterns are more likely to receive funding than those that do not demonstrate strong linkages.

For some cities, climate change has been a pivotal source of inspiration towards transportation solutions that serve more people without greatly increasing carbon emissions. These cities recognize that auto-dominated transportation systems are not sustainable and must find ways to mitigate the effects of transportation on the environment. The commitment to create more environmentally sustainable cities is evidenced by the Clinton Climate Initiative's C40 program, a coalition of cities around the world dedicated to reducing greenhouse gas emissions. Seven North American Cities are part of the C40 initiative (Chicago, Houston, Los Angeles, Mexico City, New York City, Philadelphia and Toronto) and an additional six North American cities are affiliates of the program (Austin, New Orleans, Portland, Salt Lake City, San Francisco, and Seattle). C40 encourages cities to expand the use of low-carbon vehicles and reduce the mode share of motorized vehicles by supporting public transit, walking, and cycling [6].

The increased desire to live in more urban and walkable communities has promoted the shift towards transportation systems that better coordinate transportation and land use to produce the type of development desired by today's society. Reconnecting America and the Center for Transit-Oriented Development (CTOD) estimates that market demand for housing near transit will reach 15.2 million households by 2030, more than twice the number of households that lived near transit in 2007. The Center also estimates that in 2030, 24% of housing demand in the United States will be for transit-oriented development housing [7]. While CTOD cites increased congestion and changing demographics (a shift towards more singles and more ethnic diversity) as dominant forces behind the increased demand for transit-oriented development, the shift is also consistent with the belief that younger generations and the "creative class" prefer walkable communities with vibrant street life [8]. The Urban Land Institute also recognizes this trend in its 2011 forecast for the real estate market, stating that the "move back in" trend will increase in future years as twenty-somethings now desire more vibrant urban areas and aging members of the Baby Boomer generation are not looking for a downsized lifestyle [9].

2.2. Federal Transportation Policies and Funding

Once segregated by mode, federal funding policies have become more flexible, more balanced between modes, and more supportive of intermodal projects [10]. Federal policy and funding initiatives such as ISTEA, TEA-21, SAFETEA-LU, TIGER grants, and most recently the Partnership for Sustainable Communities have opened doors for the creation of more sustainable transportation systems in the United States. The timeline below includes the major federal legislation of the past two decades that has both promoted and funded multimodal transportation systems.

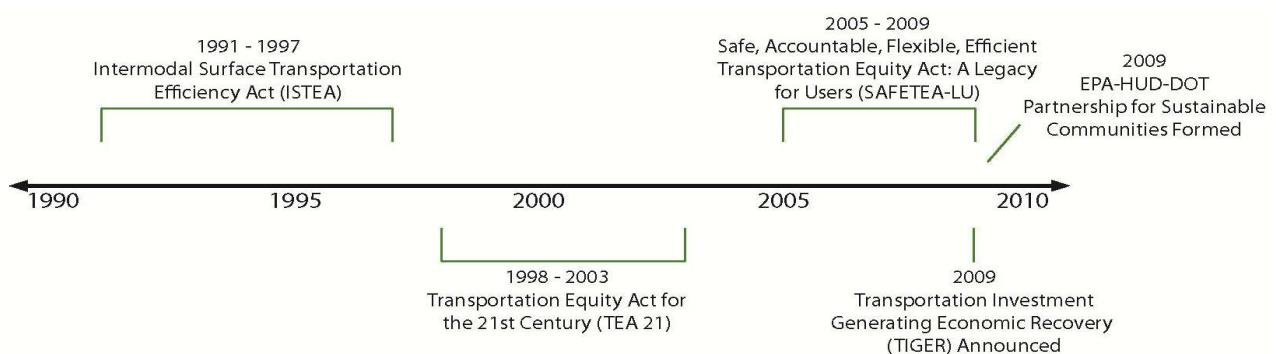


Figure 1: Major Federal Transportation Legislation in the Past Two Decades

Considered landmark legislation for transportation, the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) reversed the auto-oriented funding policies of the interstate era by increasing funding and opportunities for intermodal and multimodal facilities [11]. Among its many accomplishments, the legislation expanded funding for and authority of Metropolitan Planning Organizations (MPO), required MPOs to create long-range transportation plans, increased funding opportunities for pedestrian and bicycle facilities [12], designated high speed rail corridors, and provided funds for non-motorized commuter trails.

The Transportation and Equity Act for the 21st Century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) both built upon the premise and success of ISTEA, increased the funding for transportation and continued the policy of encouraging regional planning and multimodal transportation planning. TEA-21 and SAFETEA-LU allocated \$198 billion and \$244 billion to transportation projects, respectively [13,14]. Approximately 18% of the funds were designated for transit projects and 82% for highways projects. The flexibility in the type of projects that were eligible to use these funds is one of the cornerstones of these legislations.

ISTEA, TEA-21 and SAFETEA-LU all supported efforts that served multiple benefits and required the cooperation of multiple agencies and stakeholders. Most notably, these transportation legislations authorized the Congestion Mitigation and Air Quality Improvement (CMAQ) program, providing the funds for surface transportation projects that reduce congestion and improve air quality.

Recent federal funding sources for transportation continued to encourage a sustainable approach to transportation planning that requires regional and interagency collaboration. The Partnership for Sustainable Communities, formed in 2009, is a partnership at the federal level between the Department of Transportation, the Environmental Protection Agency and the Department of Housing and Urban Development. Grants provided by this partnership fund projects that provide more transportation choices, promote affordable housing, enhance economic competitiveness, support existing communities, coordinate and leverage federal policies, and value communities [15].

The American Recovery and Reinvestment Act, a federal stimulus package introduced in response to the recession that began in the fall of 2008, appropriated \$1.5 billion of discretionary funds through September 2011 for surface transportation projects [16]. The result of this appropriation was the Transportation Investment Generating Economic Recovery (TIGER) program, which allocated funds to communities throughout the United States based on selection criteria that include:

- Impacts on livability, sustainability, safety, and state of good repair;
- Job creation and economic stimulus;
- Innovation; and
- Partnership, collaboration and integration [17].

2.3. Effect of Federal Transportation Policies on Cities

The evolution of the transportation field and federal funding initiatives vary in their effects on regions and municipalities. The transformative potential of these pieces of legislation has not always translated to transformative change in practice. The long-established tradition of lower density development served by auto-oriented transportation systems is difficult to erase, as public zoning codes and private engineering standards alike have

adapted to encourage such development patterns. And in communities that have not had transportation options outside of the automobile for generations, the benefits of progressive policies may seem too abstract and lofty to garner public support.

In the face of these obstacles, a select number of cities have made steps towards sustainable, multimodal transportation systems that support livable communities. This research investigates the approaches of these cities and how other cities can learn from their experiences.

3. METHODOLOGY

Directors and key leaders of departments of transportation and planning were interviewed to understand how they are moving their agencies forward in terms of the adoption and implementation of more sustainable planning and design methods. Questions are focused on what catalysts are responsible for these changes – federal funding policy, changing social norms, demographic shifts, etc. The goal of the interviews is to identify key factors that spur changes in transportation networks. Additionally, both successes and struggles encountered when implementing new, more sustainable policies and developments are documented to provide insights for other cities in the process of implementing new transportation and related land use policies.

Directors of transportation and planning departments were solicited for interviews along with key senior staff. Phone interviews were conducted with two Arup staff, lasting approximately half-an-hour with interview notes transcribed immediately thereafter. Once all interviews were conducted, answers were analyzed to identify themes and common lessons valuable for other cities interested in developing more complete transportation systems.

The seven cities interviewed and analyzed are not intended to be a comprehensive sample of cities, nor a holistic guide of how to translate federal funding into sustainable developments. Charlotte, Chicago, Houston, Los Angeles, New York, Portland, and Washington, D.C. are selected for study to provide a cross-section of cities engaged in the transformation of their practice and the creation of more sustainable transportation systems, at different scales, with different priorities and in different stages of implementation. With these cities, this paper intends to flush out the disparate histories to find a narrative of transformation and to better understand underlying trends that shape transportation planning and policies in American cities. The following leaders were interviewed:

- Charlotte: Director Danny Pleasant, Charlotte Department of Transportation
- Chicago: Deputy Commissioner Luann Hamilton, Chicago Department of Transportation
- Houston: Assistant Director Michael Kramer, Department of Planning and Development
- Los Angeles: Executive Officer Diego Cardoso, Planning Department LA Metro
- New York: Commissioner Janette Sadik-Khan, New York City Department of Transportation (interview scheduled)
- Portland: Director Susan Keil, City of Portland Bureau of Transportation
- Washington, D.C.: Director Harriet Tregoning, Office of Planning

4. CITY BACKGROUND: RECENT INITIATIVES

Prior to the interviews, the research team compiled a brief description of recent initiatives to develop sustainable transportation systems in the seven cities included in the interviews. Those initiatives are provided in the table below.

Table 1: Recent Sustainable Transportation Initiatives in Selected Cities

City	Key Initiatives
Charlotte	<ul style="list-style-type: none"> 9.6 mile South Corridor Light Rail Transit Line opened in 2007 with ridership outpacing projections immediately Urban Design Street Guidelines won EPA Smart Growth Award in 2009 City Bike Plan will expand the miles of dedicated bike lanes from 50 to 182 and bike routes to 430 by the year 2030
Chicago	<ul style="list-style-type: none"> The Green Alley Pilot Program aims to replace some of the 1900 miles of concrete alleyways with more permeable paving materials B-Cycle Bicycling began providing bike sharing services in 2010 Chicago Transit Authority initiated the environmental review process for the Red and Purple Modernization project Chicago DOT awarded multiple sustainable transport projects through the Illinois Transportation Enhancement Program
Houston	<ul style="list-style-type: none"> Awarded 3 Houston-Galveston Area Council Livable Centers studies in the past 4 years The Urban Corridor Planning Initiative aims to build a high quality urban public realm around METRO's LRT corridor
Los Angeles	<ul style="list-style-type: none"> The Gold Line Light Rail Eastside Extension represents continued expansion of LA's light rail infrastructure LA County Metropolitan Transportation Authority (LAMTA) and the City of LA developed the city's Metro Bus Rapid Transit system, which is the largest in the country with 21 routes over 400 miles The Metro Orange Line, an exclusive dedicated busway, opened in 2000 LAMTA was awarded \$2 million from the Federal Transit Authority in 2010 to fund studies of the Van Nuys Corridor and other regional transit projects
New York	<ul style="list-style-type: none"> MTA New York City Transit carries 2.3 billion customer trips a year PlaNYC is the City's long-range comprehensive sustainability plan and seeks to address issues such as climate change, security, environmental preservation, energy consumption and transportation The Street Design Manual lays out a set of tools to be applied to streets in order to improve safety, enhance mobility and access, and increase sustainability Over 200 miles of bike lanes have been installed, 7 blocks of Broadway pedestrianized, and 3 BRT lines installed in the past four years
Portland	<ul style="list-style-type: none"> Portland Metro system (TRIMET) ridership has doubled since 1990 Portland's Climate Action Plan aims to cut greenhouse gas emissions by 2050; by 2030, vehicle miles travelled will be reduced by 30 percent from 2008 levels Mode share of bicycle commuters is 6.8%, the highest in the country The MAX Green Light Rail opened in 2009

Washington D.C.	<ul style="list-style-type: none"> • The District Department of Transportation signed its Complete Streets Policy in 2010 • The Capital Bikeshare program encourages alternative modes of transportation by providing 100 stations and 1000 bikes • DDOT recently launched a Transportation Demand Management program to reduce the mode share of single-occupant vehicles • DDOT continues to progress the DC Circulator bus system, adding a new route in 2010
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5. RESULTS OF INTERVIEWS: KEY THEMES

Though each city may face unique challenges and approach solutions differently, several key themes emerged from the interviews with the transportation leaders. These themes revolve around the changes in the transportation field, catalysts for those changes, and steps taken to implement the changes. The themes identified in the interviews and discussed below include:

- 1) Changing Approach to Transportation Planning and Project Development;
- 2) Catalysts for Change;
- 3) Collaborative Approach;
- 4) Innovative Implementation Programs; and
- 5) Learning from Peer Cities.

5.1. Changing Approach to Transportation Planning and Project Development

The general consensus of the transportation leaders interviewed as part of this study is that the changes in their transportation systems have been a result of gradual changes occurring for several decades.

Professionals in the transportation field, and these agencies in particular, recognize that transportation planning is not as compartmentalized as it has been previously. Departments of transportation do not just serve the needs of the automobile but must also serve transit, cyclists and pedestrians in a more balanced environment. Harriet Tregoning, Director of the Office of Planning in DC, mentioned that there has been a movement toward the acknowledgement of walking, biking and riding transit as *normal* modes, rather than *alternative* modes of transportation. Additionally, departments of transportation cannot focus purely on mobility but must view transportation as a component of the public realm, assessing how it supports the development goals of the region. Danny Pleasant, Director of the Charlotte Department of Transportation stated that the City has made a shift from focusing on mobility functions to the overall function of how transportation affects people's lives. Luann Hamilton, Deputy Commissioner of the Chicago Department of Transportation acknowledged that the transportation planning field now recognizes the important impact that transit and pedestrian-friendly amenities have on a community, serving as tools for both economic development and placemaking.

The beginning of a shift in transportation paradigms are often most visible in a policy-based initiative or a major infrastructure improvement. In the case of Washington DC, the construction of a regional transit system (Metro) spurred the change in attitude and awareness of the benefits of regional collaboration in providing alternatives to the automobile. For Houston, the expansion of the Light Rail to new neighborhoods uncovered the need for a public involvement process, which later became integral in obtaining support for sustainable transportation initiatives. Portland's transportation environment

changed in large part due to the City Council's Climate Action Plan; which resulted from the acknowledgement that the metro area was overdeveloped and there was no space to expand roads.

Cardoso attributes much of Los Angeles's transformation to the global awareness and acceptance of climate change, but also to the passing of a milestone tax program by the public. Measure R resulted in a half-cent sales tax that goes directly to transportation projects. In Chicago, it was the traffic calming initiative and streetscape program of the early 1990s, coupled with Mayor Daley's support for sustainable transportation that spurred the transformation. The holistic vision of transportation planning really came together at Chicago DOT with the 2006 Complete Streets Policy, said Hamilton, which requires the consideration of all users when designing new roadways. Charlotte attributes the transformation to a shift in the understanding of the role of transportation – from mobility-focused to a mechanism of community building, social interaction, access and the exchange of goods, services and ideas. Key policies and practices such as the Urban Street Design Guidelines, Complete Streets Policy, and the Transportation Action Plan have furthered this movement and allowed for more efficient implementation.

5.2. Catalysts for Change

Although the changes are most visible in key policies or major infrastructure projects, there are often driving forces behind these milestones. The interviews indicate that the three key driving forces behind creating a more sustainable transportation system have been the availability of federal funding, visionary leadership and public expectations.

5.2.1 *Federal Funding*

The consensus is that federal funding has played a major, if not primary role, in the shift to sustainable transportation systems. The requirements of and competition for federal dollars has had the effect of strengthening regional and interagency collaboration for many of the cities studied.

For Washington DC and Houston, the recent federal funding initiatives (TIGER, Partnership for Sustainable Communities) have been integral in providing alternatives to the automobile. Despite the Metro system built in the 1970s, in Washington DC many residents and workers are still left to rely on automobiles for some or most of the commute trip. The TIGER grants have been instrumental to the City and Region's ability to fill in the gaps with Bus Rapid Transit and Streetcar routes, along with the Capital Bike Share system. In the expansion of their light rail system, grants from the EPA-HUD-DOT Partnership for Sustainable Communities provide the support to ensure that the system, along with the corridors and neighborhoods surrounding the transit lines are developed to support transit and walkability. Both of these cities credit their success in attracting federal funding to the collaboration between city agencies and the regional planning organization.

Due to the historically strong focus on multi-modal transportation initiatives, Portland has been in a unique position to watch the transformation of funding allocation take place. To attract ISTEA funds, which Portland was integral in framing the legislation for, Portland stresses the importance of regional partnerships. More recently, inter-agency cooperation has been integral for Portland to obtain federal funding; the EPA-HUD-DOT grants are awarded to projects that display environmental consciousness, equitable housing and accessible transportation. This is evidenced by Portland's success in obtaining a federal grant for the South Waterfront transit expansion project, which incorporates stormwater,

sewer and fiber optic improvements to the area and also provide a transit connection to new affordable housing developments.

Los Angeles is another city that has observed the change in the transportation funding arena for many decades. For Los Angeles, the effort to become a more transit friendly city came with significant hardships due to the structure of federal funding mechanisms. One barrier that has yet to change is the requirement to prove financial viability for new transit systems. Funding applications for transit projects need to display financial feasibility 20-30 years into the future; a requirement that does not exist for highway projects. Los Angeles also acknowledges that while the attention to climate change is beneficial to the country as a whole, it has led to great competition for funding; as more cities and regions apply for limited amount of funds. This demonstrates the need for cities to position themselves to compete for funds, namely through agency collaboration and cooperation.

Chicago has also benefitted from federal funding that is geared toward multi-disciplinary projects. Through ISTEA and CMAQ, the City has been successful in attracting funding for projects that improve air quality, provide transportation options and reduce congestion.

Although each of these cities have been able to leverage federal funding, both Los Angeles and Charlotte feel that there are still significant barriers to obtaining and/or properly distributing the funding.

5.2.2 Visionary Leadership

For many cities, visionary and strong leadership is credited for enabling change within the department and implementing change in the city's urban fabric. Hamilton recognized the importance of political will as a driving force for change, stating that Mayor Daley's support and passion for programs such as the bicycle network have been fundamental in creating a sustainable and multimodal transportation system. The power of political will could also be seen in New York City, said Hamilton, as the political will of Mayor Bloomberg and Janette Sadik-Khan have led to great projects and pedestrians spaces.

Though Susan Keil, Director of the Portland Bureau of Transportation credits the public's environmental consciousness as the primary driving force behind the sustainable nature of the city, she affirmed that the political support of the mayor and Congressman Earl Blumenauer have been critical for transportation initiatives that provide alternatives to the automobile. In Houston, the Mayor was integral in generating support from the community and city agencies to collaborate in its efforts to secure a \$3.75 million Sustainable Communities Grant. Although the degree to which visionary leadership has launched transformation in each city varies, it is apparent from these interviews that change is difficult to realize without the support of leadership within departments of transportation and at the mayoral level.

5.2.3 Public Expectations

Public expectations were often cited as key driving forces for implementing transportation policies that offer alternatives to the automobile and integrate into more urban, walkable and livable land use patterns. An early adopter of multimodal transportation and smart growth, Portland has had a different attitude from much of the nation. "The Portland community is very environmentally conscious and understands the need for a multimodal system," stated Keil.

While Portland has benefited from the environmental consciousness of its general public for several decades, other cities have observed more recent changes in public expectations, especially in younger generations. In Chicago, community support and advocacy has grown stronger in recent years, with groups such as the Active Transportation Alliance becoming a major player in the development of the city's transportation network. Hamilton acknowledged that there is a general sense that younger generations are thinking differently about cars and desire to live in communities that offer transportation choices. Pleasant echoed the sentiment, stating that "newer generations have different expectations and find urban environments more desirable than past generations."

Some motivation for this generational shift in expectations may be attributed to the cost of owning and operating an automobile in regions suffering from sprawl and congestion. Diego Cardoso of LA Metro expressed the idea that "long and costly commutes have motivated citizens of LA to think differently about transportation and transit," while Harriet Tregoning, Director of Planning in Washington DC stated that "living in a city that provides public transportation relieves young professionals weighed down with student loans of the burden of a car payment."

5.3. Collaborative Approach

In order to leverage federal funding and implement sustainable, multimodal transportation policies, cities were often required to overcome both internal and external barriers. City agencies have become more proactive, re-evaluating how they interact with other agencies and disciplines within the region, how they partner with the business community, and how they communicate with the general public.

5.3.1 *Interagency and Interdiscipline Collaboration*

Several cities indicated that federal funding policies, especially the most recent programs such as TIGER funds and Sustainable Communities grants, have been an impetus for interagency and regional cooperation. Multi-jurisdictional projects that achieve multi-agency goals require regional collaboration. Increased competition for grants has also required cities to leverage partnerships with other agencies to be competitive for these federal grants.

Michael Kramer, Assistant Director of the Houston Planning and Development Department, described how city agencies have improved their relationships with the local Metropolitan Planning Organization (Houston-Galveston Area Council). The City restructured committees, bolstered regional relationships and created new contacts, forming a collaborative regional effort that is capable of competing for federal dollars to fund transportation and land use projects.

5.3.2 *Interacting with the Business Community*

When it came to working with the business community, five of the cities commented that the business community recognizes the important role that transportation plays in the economic viability of the city. Business improvement districts in several of the cities interviewed support improvements to the streetscape and the transportation network through self-imposed assessments. Transportation improvements are recognized as a tool for economic development in Charlotte where the Chamber of Commerce serves in an advocacy position for transportation funding.

Some cities have been more creative in how they partner with local businesses. In Washington DC, the Department of Transportation has created bicycle parking that symbolize businesses, providing structures that offer transportation alternatives and marketing for businesses. In New York City, the Department of Transportation allowed two restaurants to establish a pop-up café in four former parking spaces. The pop-up café resulted in an improved public realm and a boost in business for adjacent restaurants [18].

5.3.3 *Public Involvement*

Each of the cities interviewed take a different approach to public participation and community involvement in transportation projects. Keil stated that “smart, open and honest communication with the public is essential to garner support and ensure the success of the project.” Transparency, especially about the costs and implications of a project, is important. In Chicago, CDOT officials work closely with its aldermen who serve as an avenue of communication between the agency and the community. Aldermen often have close relationships with their constituents, enabling them to understand their concerns and desires. In one instance, Hamilton mentioned, an alderman offered his constituents the opportunity to vote on projects they wanted funded through the capital improvements funds allocated to their jurisdiction. This approach created ownership of transportation projects in the community.

5.4. Innovative Implementation Programs

In addition to taking a more collaborative approach to transportation planning, many city agencies are taking a more innovative approach to implementation. Pilot projects allow city agencies to test innovative ideas prior to wide-scale application or adoption. All cities interviewed use some form of pilot programs. The type of pilot programs varied in intensity and application, from pervious pavements used in Green Alleys in Chicago to full-scale pedestrianization of some prominent streets in New York City. Pilot programs are an integral piece of the equation in Portland, where the pilots have been used to test bicycle boxes, bicycle boulevards, cyclist activated signals, warm asphalt, pervious pavers, electronic pay stations, and signal timing triggered by freight vehicles. Keil noted the importance of collecting before and after data on pilot projects to measure results, stating that PBOT has partnered with local Portland State University to conduct studies on pilots.

The most commonly cited pilot projects involved the testing of new pavement types and traffic calming devices. All respondents acknowledged that pilots could be used to test new ideas, spurring innovation and gaining support for projects prior to wide-scale application or permanent code and policy adoptions.

5.5. Learning from Peer Cities

A theme reiterated in the interviews is the idea of learning from peer cities around the world that face similar issues and have taken innovative approaches in developing sustainable transportation systems. The interviewers were asked to identify those peer cities that are most inspirational and also to provide advice to other cities striving to develop sustainable transportation systems.

5.5.1 *Inspirational Peers*

When looking at other cities for inspiration, Portland and New York City are the most heralded American cities for creating sustainable transportation networks and communities. New York City’s leadership was often cited as the key catalyst for the City’s transportation transformation currently underway. “Janette Sadik-Khan has done a wonderful job

recreating space in New York,” Tregoning comments. “The political will of Mayor Bloomberg to empower Janette Sadik-Khan has led to great projects. The pilots create great pedestrian spaces before millions of dollars in investment as well as provide the ability for the City to capture buy-in at minimal costs,” Hamilton echoes in praising the City’s political leadership. Although often mentioned by the cities interviewed as a beacon for inspiration, no particular element of Portland’s policies are specifically referenced, only general praise for Portland’s overall transportation and planning systems.

Internationally, both European and South American cities are identified as areas providing inspiration. European cities are studied on past merits, on how traditional western cities were initially built for walkability which has subsequently made bicycling and multimodal transit more feasible. “These cities have been successful for hundreds of years. By looking at the success of these cities, you can examine how the age-old practices and elements can be incorporated into modern cities,” Pleasant states. For Los Angeles, Bogota and Curitiba provided great precedent case studies for bus rapid transit development for the City’s recent Metro Rapid system. Houston and Charlotte found similar peer cities as sources for good practices. Houston, claiming the identify of a western city, identified Atlanta, Phoenix, Denver and Los Angeles as cities making incremental changes in tackling similar issues of sprawl and expansive roadway networks. Charlotte views Chicago, Sacramento, and Charleston as cities balancing the needs of a modern economy with creating quality communities.

Portland, while mentioning New York and global cities as sources for new ideas, sets themselves apart as somewhat peerless. “We want to learn and certainly look to what other cities are doing,” Keil claims but “the Portland region is out ahead of the rest of the country.”

5.5.2 Advice to Peers

The advice given to other cities in the early stages of implementing sustainable transportation policies and programs centered on starting with small, feasible projects, educating the public and politicians, building frameworks of consensus and holding a broad perspective of the role of transportation planning in shaping the overall desirability of a city.

While the efforts of Mayor Daley are touted for Chicago’s gradual transformation, disseminating policy changes through the government is seen as essential for successful implementation. “Elected officials should be educated on the benefits of sustainable transportation projects in order to keep these types of projects moving forward,” Hamilton comments as political support is the best means to gain larger general support for planning policies. Alongside officials, city staff are trained in more sustainable best practices, as are the City’s consultants. As design is rarely conducted in house, training consultants is important to ensuring new policies are manifested in subsequent design work. Directly educating the public is Kramer’s most significant strategy for gaining support for Houston’s new sustainable initiatives. He uses every public speaking engagement and outreach opportunity to discuss LRT with the public, to help the Houston community grasp the benefits to LRT, discuss who could potentially use the network and to counter the vocal opponents who largely do not want to pay for a system they believe they will not utilize. Engaging and educating the public is essential to incrementally phase the City from its current bus system and HOV lanes, to a more fixed-rail transportation network by building support gradually, alongside smaller-scale, tangible projects.

Portland, conceding its advantage of having a built-in, environmentally conscious community, also believes awareness is the most important element to building a multimodal transportation system for cities that have not yet solidified community and political consensus around sensible growth. “Smart, open and honest communication with the public is essential to get their support and ensure the success of a project,” Keil emphasizes. For Keil, not advocating one form of transport is advised – “It is important not to force certain types of transit.” Rather, placing the right transit system with the appropriate place and land use is vital for the success, and public support, of the system. Moreover, Kiel believes communication between the public and city is best approached through discussions around larger global conversations of the need to reduce foreign dependence on oil, the impacts of our freeways and roads being at capacity and the creation of new jobs from a greener economy. This advice is similar to Cardoso’s belief that global warming, peak fuel and foreign energy dependence are important discussion points to elicit public concern and support for local initiatives. In contrast, creating a strong public realm, decreasing city expenses and creating a stronger economic base grounds Charlotte’s discussions with the community.

In Los Angeles and Charlotte, transportation policy has come to be seen as having a broader, more holistic impact on influencing the shape and character of a city. Cardoso advocates viewing the transportation network as an essential part of a bundle of public goods that make living in a particular city attractive, or conversely unappealing. The power in taking a sustainable approach to transportation is that “sustainability helps to create value in spaces that in the past did not have value.” The business of sustainability forces cities to learn how to do more with less while allowing a reinvisioning of the possibilities of what public space can become. Similarly, Charlotte views transportation as a community building tool and the public realm as a real estate amenity. With the new found perspective that the CDOT is responsible for creating a quality public realm experience for every citizen, Pleasant believes creating more sustainable streets requires implementing small projects to develop gradual community support while concurrently holding a long term vision.

Washington, D.C. and New York are notable exceptions to the other cities’ advice centering on small projects and consensus building. “Take guerrilla actions to make over blocks, temporarily demonstrating what streets would look like if they were properly designed for all modes,” Tregoning recommends. And New York’s use of pilot programs can also be similarly seen as “guerrilla” actions, an attempt of creating public support and consensus through the demonstration of a project, before garnering direct public approval for new bike lanes, road closures and the creation of new, temporary public spaces.

The wide ranging spectrum of advice given by these city leaders is perhaps linked to the phase of a city’s sustainable infrastructure. Cities at the opposite ends of the sustainable transportation spectrum espouse the need for education and building community buy-in. Charlotte and Houston, at the inception of transforming their streets and transport networks, support small projects and community education. Portland, where consensus has already been built, also advises towards not pushing a particular transport agenda alongside the need for open communication between a city and its citizens. Washington, D.C. and New York City, having made consistent progress, but have not completely gained uniformed public and political consensus, have taken a more aggressive tactic. Act; and subsequently defend with the hopes to persuade. Chicago seems to be a notable exception. While Chicago has made continued progress in encouraging sustainable transport and building more sustainable infrastructure, Tregoning advises the importance

of education, albeit at a more technocratic level, for politicians, city staff and affiliated consultants.

CONCLUSIONS

As previously mentioned, the seven cities included in this study are not intended as a comprehensive analysis of all cities, nor a holistic guide of how to translate federal funding into sustainable communities. However, in analyzing the experiences of these seven cities, some basic recommendations can be made to help guide cities desiring to develop a community supported by sustainable and multimodal transportation:

- **Take a Holistic Approach** – Cities must understand the broader implications of transportation projects, taking a holistic approach to planning. Transportation projects not only affect mobility, but also contribute to livability and have economic, environmental and social repercussions. Diego Cardoso of LA Metro expressed that sustainable transportation systems can create value in spaces, building more livable cities by activating streets and sidewalks. He added that the reality of global climate change, the country's rising obesity levels, and the lack of affordable transportation options are all reasons to support sustainable transportation initiatives. Transportation projects should support the overall development goals of the city and the region and incorporate the goals of other city agencies (such as departments of health, public works, city planning, parks and the environment) when possible.
- **Harness Visionary Leadership** – Support from visionary and proactive leadership was often cited as a driving force of transformational projects. Cities must both cultivate and utilize leadership that is capable of guiding the city through key changes. Strong leadership within city agencies and mayoral support of sustainable transportation projects puts a city at an advantage for securing funding and implementing key projects. New York City's Mayor Bloomberg and DOT Commissioner Janette Sadik-Khan have not only provided vision for New York but have established themselves as committed to achieving that vision through making physical, visible and immediate changes to city streets.
- **Connect Policies to Best Practices** – Cities must establish policies, regulations and guidelines to support their vision for the city and transportation's role in achieving that vision. These policies must be implementable and the city agencies should strive to connect day-to-day practices with the established policies. To ensure that its Complete Streets Policy was carried through and employed in daily operations, the Chicago DOT conducted training sessions with its staff agency-wide and extended the training to its consultants and elected officials.
- **Develop the Right Tools** – Evaluating whether or not the agency is equipped with the tools necessary to meet the community's transportation needs and goals is essential. Cities must be willing to examine the efficacy of current business practices and organizational structure in enabling them to achieve their goals. Recognizing that the current structure of city agencies were not adequately equipped to conduct multimodal transportation plans that incorporated extensive public participation, the Houston Planning Department created a Mobility Team and solidified its relationship with the local MPO. This proactive approach to restructuring internal organization is necessary to overcome long-established

practices and barriers to progress. Cities must be willing to adapt their practices and organization structures to a changing environment. These relationships and restructuring efforts serve an important role in mobilizing the necessary parties to obtain federal funding and support for sustainable transportation initiatives.

- **Collaborate, Collaborate, Collaborate** – A key finding from the study interviews is that the regional nature of transportation projects and federal funding policies require agencies to collaborate at a regional level. Cities should collaborate internally as well as externally, encouraging cooperation between city agencies and reaching out to other jurisdictions. Collaborations with community advocacy groups and the business community is also essential in developing projects that have public buy-in and meet the needs of the community which they serve. In response to federal funding, the Washington, D.C. region took a collaborative, multi-jurisdictional approach to bus rapid transit. By mobilizing various communities, the region hopes to create a larger and more effective plan for bus rapid transit that can be funded incrementally.
- **Speak the Same Language** – Cities should ensure that all participating agencies and stakeholders are speaking the same language. With the establishment of PlaNYC, New York City Mayor Bloomberg made an overarching commitment to transforming the city's transportation system by improving safety and creating people-oriented spaces. These goals have reverberated throughout city agencies and among advocacy groups. The City of Charlotte attributes its success to the common language in which the Mayor, City Council, City departments, businesses and public stakeholders speak about the way in which they want Charlotte to grow and develop.
- **Know Your Audience** – It is important for agencies to understand their audience. In some communities, incremental changes involving extensive public education and outreach have been necessary to garner support for key projects. Other communities need to observe the success of a project, usually in the form of a small pilot project, before willingly adopting the idea. The chosen approach will depend on the community with which they are working. No matter what the method used, Susan Keil of the Portland Bureau of Transportation recommends that smart, open and honest communication with the community is necessary to ensure success.

How these cities are incorporating more sustainable practices in creating new streets and communities are reflected in their respective stage of development. New York, Chicago and Washington D.C. as older large American cities, are attempting to dismantle some of their auto-oriented infrastructure built in the 1950s to begin to encourage other forms of transportation. Settled by an environmentally aware populace, Portland is an example of what sustainability looks like when land use and sustainable transportation networks are developed in tandem in the early stages of a city's growth. Houston and Los Angeles, cities designed around the auto, are grappling with how sustainable communities can be built upon infrastructures always intended for cars and single-use land use.

Charlotte provides perhaps the best insight for the typical, moderate-sized American city. When engaging in community outreach, Director Pleasant asks citizens to identify the locations that represent the best of Charlotte. Typically, community members point back to black and white photos of buildings and neighborhoods in Charlotte built before auto-centric, sprawl development came to shape the City's development patterns. Subsequently, the community asks why the City can't get back to the era of development represented in

old pictures. So perhaps it's a matter of looking back to move forward in building sustainable transportation and communities. Instead of referencing leading cities such as Portland and New York for inspiration, capitalizing on the desire for the lifestyle and built environment cities once had can be a useful departure point for communities beginning their green transport revolution.

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