Final Report

Streetcar Projects as Spatial Planning: A Shift in Transport Planning in the United States

Performing Organization: Columbia University

February 2016
The Region 2 University Transportation Research Center (UTRC) is one of ten original University Transportation Centers established in 1987 by the U.S. Congress. These Centers were established with the recognition that transportation plays a key role in the nation's economy and the quality of life of its citizens. University faculty members provide a critical link in resolving our national and regional transportation problems while training the professionals who address our transportation systems and their customers on a daily basis.

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University Transportation Research Center
The City College of New York
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Tel: 212-650-8051
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**Abstract**

Currently dozens of U.S. cities are in the midst of planning and building modern streetcar systems. Though seemingly mobility investments, the intended impacts of these streetcar projects reach beyond transportation and represent a strong turn toward strategic spatial planning through transportation infrastructure. Proponents of modern streetcars argue that they are tools of place making as much as if not more than improvements for transit services. Unlike transit investments of a century ago, when privately operated streetcars were a decentralizing force that helped disperse overcrowded central city cores and open new land for real estate development, current streetcar projects in the United States are expected to concentrate activity and economic development in select corridors. The majority of these new systems rely on transit technologies that are significantly improved over the carriages of old, with modern features, smooth rides and quiet operations. Yet for all the improvements to the vehicles and services, new streetcar investments no longer primarily improve transit accessibility. Rather, modern streetcars are part of strategic amenity packages cities use to achieve real estate and economic development goals. This use of transportation infrastructure as an amenity for a particular location is a shift away from traditional transportation planning processes, and the expected benefits, in particular, stand apart as being deliberately spatial. We use planning documents and data from ballot box initiatives to evaluate expected transportation benefits relative to indirect benefits through economic development. We find that approximately three quarters of all expected benefits from streetcar projects accrue to property development with the remaining expected benefits assigned to transportation. However, we do not find sufficient empirical evidence in the literature to support such certain claims of positive effects on property values and the built environment. We argue that the increasing tendency of cities to leverage streetcar projects for non-transportation purposes represents a turn to the use of infrastructure as a tool of spatial planning.
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Streetcar projects as spatial planning: A shift in transport planning in the United States

David A. King *, Lauren Ames Fischer

Graduate School of Architecture, Planning and Preservation, 400 Avery Hall, MC 0356, 1172 Amsterdam Avenue, Columbia University, New York, NY 10027, United States

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A B S T R A C T

Currently dozens of U.S. cities are in the midst of planning and building modern streetcar systems. Though seemingly mobility investments, the intended impacts of these streetcar projects reach beyond transportation and represent a strong turn toward strategic spatial planning through transportation infrastructure. Proponents of modern streetcars argue that they are tools of placemaking as much as if not more than improvements for transit services. Unlike transit investments of a century ago, when privately operated streetcars were a decentralizing force that helped disperse overcrowded central city cores and open new land for real estate development, current streetcar projects in the United States are expected to concentrate activity and economic development in select corridors. The majority of these new systems rely on transit technologies that are significantly improved over the carriages of old, with modern features, smooth rides and quiet operations. Yet for all the improvements to the vehicles and services, new streetcar investments no longer primarily improve transit accessibility. Rather, modern streetcars are part of strategic amenity packages cities use to achieve real estate and economic development goals. This use of transportation infrastructure as an amenity for a particular location is a shift away from traditional transportation planning processes, and the expected benefits, in particular, stand apart as being deliberately spatial. We use planning documents and data from ballot box initiatives to evaluate expected transportation benefits relative to indirect benefits through economic development. We find that approximately three-quarters of all expected benefits from streetcar projects accrue to property development with the remaining expected benefits assigned to transportation. However, we do not find sufficient empirical evidence in the literature to support certain claims of positive effects on property values and the built environment. We argue that the increasing tendency of cities to leverage streetcar projects for non-transportation purposes represents a turn to the use of infrastructure as a tool of spatial planning.

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1. Introduction

Modern streetcars are hailed as catalysts for local economic development, improved pedestrian environments, enhanced transit service, as well as improved livability and quality of life in the corridors served. Most of the proposed and existing U.S. systems are short (generally less than 10 km), individual lines that serve commercial districts and downtown areas on tracks in mixed-traffic. These systems are distinct from light rail and other transit systems which tend to utilize dedicated rights of way, span longer distances and make infrequent stops. The National Transit Database (NTD) of the United States defines streetcars as “rail systems operating routes predominately on streets in mixed-traffic. This service typically operates with single-car trains powered by overhead catenaries at frequent stops” (Federal Transit Administration, 2014). Streetcar systems also vary in their design characteristics. Some are historical throwbacks (i.e. Little Rock, AR; Memphis, TN; Tampa, FL) and others offer sleek new trains (i.e. Salt Lake City, UT; Seattle, WA; Portland, OR). Some have integrated their fare payment systems with local transit agencies (i.e. Portland, OR; Cincinnati, OH) while others provide rides free of charge (Atlanta, GA; Kansas City, MO). Some system are owned and operated by local transit agencies (i.e. Salt Lake City, UT; Dallas, TX) while others belong to the city or non-profit organizations (i.e. Portland, OR; Kansas City, MO; Atlanta, GA). Overall the contemporary experience of U.S. streetcars is as varied as the cities they serve. Despite these differences, streetcar investments consistently invoke spatial planning and are justified with the expectation of increased land value and property development benefits.

Using infrastructure to achieve strategic planning goals is an idea that has come around before (Neuman and Smith, 2010), but currently is part of a global trend (Dodson, 2009). Specifically to transit, infrastructure has been used very differently over time based on changing needs and competition. For instance, over a century ago streetcar transit technologies helped usher in an era of decentralized urbanization and speculative land development (Warner, 1962; Divall and Bond, 2003; Xie and Levinson, 2010). While speculative development is still active, transit technologies—including streetcars—are no longer a

* Corresponding author.
E-mail address: dk2475@columbia.edu (D.A. King).

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decentralizing force. This historical role of streetcar development con-
trasts with the effects streetcars are expected to have today in U.S. cities, where they are promoted as a centralizing force that attracts house-
holds, businesses and development back to the center of cities.

In this paper we are concerned with whether streetcar projects have been used as a form of spatial planning at the expense of integrated transportation planning. To isolate the spatial planning components we evaluate direct transportation effects of recent streetcar projects and examine the way these projects are funded and in some cases sold to the voters. We argue that one way streetcar projects embody strategic spatial planning is in their isolation from other long-range planning efforts of city and regional agencies, especially transit pro-
viders. This paper is organized as follows. The next section describes the recent popularity of modern streetcars and elaborates on the argu-
ment that these projects are examples of strategic spatial planning. We then provide a brief review of the relevant literature, followed by descriptions of current and proposed streetcar projects. In the analysis section we use data from the Federal Transit Administration (FTA) Small Starts and U.S. Department of Transportation’s Transportation In-
vestment Generating Economic Recovery (TIGER) programs to evaluate proposed benefits from federally supported streetcar projects, followed by discussion and concluding remarks.

2. Strategic spatial planning through transport infrastructure

We argue that modern streetcar projects are best understood as a turn toward strategic spatial planning in U.S. cities, marking a move away from integrated approaches to transportation policy. Strategic spatial planning refers to a planning and policy process applied to a spe-
cific geographic area or territory (Healey et al., 1999) and is a term more commonly used in European planning than in the United States. This ap-
proach differs from traditional urban planning efforts by purposefully combining various functional or sectorial priorities (such as mass trans-
portation and economic development policy) into a single framework. Spatial planning involves setting frameworks and principles to guide the location of development and physical infrastructure as well as de-
velling a set of governance practices for developing and implementing strategies, plans, policies and projects for regulating the location, timing and form of development (Healey et al., 1999). In contrast to traditional urban planning processes, spatial planning is a deliberate effort by local governments or territorially-based policy communities to take place-
shaping seriously.

Given the strong role that spatial planning has on framing mindsets and organizing attention, it is important to ask who the vision benefits and who it excludes, as well as to investigate the major assumptions promoted by the policy framework (Olesen, 2014). One of the underly-
ing assumptions of modern streetcar projects is that public transport in-
vestments can and should enhance private land values. Land value benefits are then combined with claims about typical transportation-
related impacts of enhanced travel options and environmental sustain-
ability to estimate the overall value of streetcar projects. Despite the plethora of effects promoted by streetcar proponents, the land develop-
ment claim remains the most explicitly invoked and is often emphasi-
sized over other benefits. Indeed, many streetcar systems’ capital and operational funding relies on taxation schemes predicated on increased land values and property development benefits. Such a framework aligns with spatial planning strategies in European countries which are increasingly guided by a narrow policy agenda that seeks to install economic growth and competitiveness as common-sense policy objec-
tives (Purcell, 2009; Allmendinger and Haughton, 2012).

The ability of streetcars to attract new activity and encourage new development is not unambiguously supported by empirical evidence. Scholars have examined how streetcars function as transit systems (Brown, 2013) and provided mixed evidence of the economic develop-
ment potential of streetcar projects (Golem and Smith-Heiner, 2010). A major assumption underlying transport infrastructure as a catalyst of development is that transportation will affect land development through accessibility improvements (Hansen, 1959). However, in areas where the transport infrastructure stock is mature, even sizable investments are unlikely to produce much economic development (Banister and Berechman, 2001). Furthermore, the overall relationship between transport and land use may be weakening (Giuliano, 1995), though this claim is also disputed (Cervero and Landis, 1995).

Looking at specific policies aimed to facilitate transit-oriented develop-
ment formidable social, economic, institutional barriers are difficult to overcome but critical for success (Cervero et al., 2004; Curtis et al., 2009). These barriers include, most notably, local land use regulations. Ignoring these barriers will inhibit development around transit stations (Loukaitou-Sideris and Banerjee, 2000), regardless of accessibility im-
provements. Other research suggests that rail investment alone is insuffi-
cient to produce benefits, and that appropriate local government policies, supportive zoning and effective planning implementation tools must be in place for development to occur near stations (Knight and Trygg, 1977; Cervero, 1984; Gomez-Ibanez, 1985; Cervero and Land-
is, 1995). These empirical realities raise concerns about the ability of modern streetcar investments alone to produce the development bene-
fits being relied upon to fund and justify the public investments. Other local policies are just as, if not more, important for achieving develop-
ment goals.

An open question then is why do cities favor complex and costly infra-
structure investments over changes in local land use or social policy as a critical tool to achieve local planning goals? The answer, in part, is explained through the way modern streetcar projects are funded. Capit-
al subsidies are administered through a variety of Federal Transit Administration programs, including Small Starts and TIGER, and are predicated on local financial matches (Mallett, 2014). These projects are often pursued by consortia of businesses and public officials rather than current transit operators or transportation planning agencies. Though operating costs must be covered through fares and local contrib-
utions, in many cases transit operators and fare policies are not decid-
ed until the streetcars are almost completed, such as in Atlanta, GA (Shapiro 2013). There is a split between decisions to build streetcar in-
frastructure and obligations associated with operations. As we explore
later, focusing on streetcars independently of operations demonstrates an attitude that infrastructure is far more important than service for shaping cities.

3. Historical context

Streetcars have a long history in the United States and were instru-
mental in shaping the urban form of many cities over a century ago (Warner, 1962). In the late 19th Century, streetcars and other passenger rail systems provided a dramatic improvement in passenger travel and were rapidly adopted by cities across the country (Garrison and Levinson, 2006). At the time rail transit technologies helped reshape cities by promoting decentralization along specific corridors as well as opening up new land for development (Divall and Bond, 2003; Levinson, 2008a, 2008b; Xie and Levinson, 2010; King, 2011). In fact, most streetcar companies made most of their profits off land develop-
ment or utility extensions rather than fare boxes (Jones, 1985). Because of shaly finances, many systems went bankrupt or were forced to reor-
ganize their finances prior to the Great Depression. By the middle part of last century, privately operated streetcar systems were suffering from urban disinvestment, competition with automobiles and fiscal arrange-
ments that left systems in fatal decline (Jones, 1985, 2008). By the 1960s nearly all mixed traffic streetcar systems had been dismantled.

In the modern era of streetcar building (i.e. the last few decades) project proponents often collaborate the historical transformative effect of streetcars with their potential to remake cities today. As discussed above, the evidence for transport investment spurring local economic growth is equivocal (Banister and Berechman, 2001; Levinson and Zhang, 2006), and new development may be more strongly related to
jeopardize the ac i t y (Golem and Smith-Heimer, 2010). Notably, however, of and is often evoked as the gold standard for how streetcars can transform and 36 systems in the planning or proposal stage. Table 1 shows the ist populations. 1 Others, especially the Portland system, were conceived (Weiner, 2014), suggesting that the more appropriate lesson from the property development near the streetcar than the streetcar investment itself provided to the private real estate community had a greater impact on prop-

or improved regional accessibility.

In many cities the streetcar operator remains undefined until shortly before operations are scheduled to commence; the selected operators do not always have experience operating transit systems and may be start-up organizations. In Atlanta the regional transit agency (MARTA) ruled themselves out as a potential operator a few months before the system was to open (Shapiro, 2013). The Atlanta situation is not unusual and such arrangements can hinder the ability to coordinate streetcar investments with existing transportation services, as well as precluding cross-subsidization of bus services with streetcar profits. When transit agencies are not central to promoting and planning streetcars the systems may not reflect and may even contradict regional transit priorities.

4. Current streetcar projects

There are currently 12 operating streetcar systems and between 15 and 36 systems in the planning or proposal stage. Table 1 shows the systems by stage of operation or planning. The most famous streetcar project (in academic and professional circles) is located in Portland, Oregon and is often evoked as the gold standard for how streetcars can transform a city (Golem and Smith-Heimer, 2010). Notably, however, officials in Portland contend that development subsidies and other incentives provided to the private real estate community had a greater impact on prop-

eing changes or other types of development incentives than to specific infrastructure investments (Golem and Smith-Heimer, 2010). As much of the literature on transit oriented development has focused on commuter rail or light rail (Urban Land Institute and Gladstone Associates, 1979; Boarnet and Compin, 1999; Bollinger and Ihlwanfeldt, 1997; Banister and Berechman, 2001; Cervero et al, 2004) it is not clear how well these analyses transfer to mixed-traffic streetcars designed to act as “pedestrian accelerators” (Owen, 2011). There is good reason to be cautious, however, as scholars have argued that transit-oriented develop-
munity and such arrangements can hinder the ability to coordinate streetcar investments with existing transportation services, as well as precluding cross-subsidization of bus services with streetcar profits. When transit agencies are not central to promoting and planning streetcars the systems may not reflect and may even contradict regional transit priorities.

5. Data

The data used in this paper were collected from a variety of online and print materials produced by both the academic and professional sectors. The operating, planned and proposed streetcar systems across the United States were identified and publicly available published materials were collected for each of the projects. In identifying streetcar projects, we relied on the FTA definition of streetcars as fixed rail projects with frequent stops (about every 500 m), a shared right of way and a concentrated service area (i.e. circulator, not long haul travel). We excluded projects that do not run on fixed rail (i.e. San Pedro, CA Downtown Trolley), and those that only provide seasonal or weekend service (i.e. River St Streetcar in Savannah, GA; Historic Trolley in Lowell, MA). We also excluded streetcars that were historically integrated with regional mass transit providers, such as Boston’s Massachusetts Bay Transportation Authority (MBTA), Philadelphia’s Southeastern Pennsylvania Transportation Authority (SEPTA) and San Francisco’s MUNI, as these system represent historic investments and are not existing transit agencies is not common for streetcar systems, many of which are promoted by local business associations, such as the Atlanta Downtown Improvement District. From a local economic development perspective, the involvement of downtown leaders and businesses as project initiators and supporters helps focus economic investment. Yet from a transportation perspective the strong role of local business coalitions can challenge project implementation or divert transportation resources away from regional priorities such as congestion mitigation or improved regional accessibility.

Table 1

<table>
<thead>
<tr>
<th>Operating (12)</th>
<th>Under construction (6)</th>
<th>Planned (11)</th>
<th>Proposed (23)</th>
<th>Suspended/cancelled (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta, CA</td>
<td>Charlotte, NC (Gold Line)</td>
<td>Austin, TX</td>
<td>Albuquerque, NM</td>
<td>Arlington, VA (Columbia Pike)</td>
</tr>
<tr>
<td>Dallas, TX ( McKinney Ave Extn)</td>
<td>Cincinnati, OH</td>
<td>Fort Lauderdale, FL</td>
<td>Baltimore, MD (Charles St)</td>
<td>Arlington, VA (Crystal City)</td>
</tr>
<tr>
<td>Dallas, TX ( Oak Cliff-Downtown)</td>
<td>Detroit, MI (M-1)</td>
<td>Los Angeles, CA (Downtown)</td>
<td>Boise, ID</td>
<td>Arlington, VA (Crystal City)</td>
</tr>
<tr>
<td>Dallas, TX ( McKinney Ave)</td>
<td>Kansas City, MO</td>
<td>Oklahoma City, OK</td>
<td>Charlotte, NC (Gold Line Phase 2)</td>
<td>Columbus, OH</td>
</tr>
<tr>
<td>Kenosha, WI</td>
<td>Seattle, WA (First Hill)</td>
<td>Providence, RI</td>
<td>Charlotteville, VA</td>
<td>Fort Worth, TX</td>
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<tr>
<td>Little Rock, AR (River Rail)</td>
<td>Wash. DC (H Street-Benning Rd)</td>
<td>San Antonio, TX</td>
<td>Colorado Springs, CO</td>
<td>Miami, FL</td>
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<td>Memphis, TN</td>
<td>Santa Ana, CA</td>
<td>Santa Ana, CA</td>
<td>Denver, CO (Colfax Ave)</td>
<td>Portland (Lake Oswego)</td>
</tr>
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<td>Portland, OR</td>
<td>St Louis, MO (Delmar Loop)</td>
<td>St Louis, MO (Downtown)</td>
<td>Grand Rapids, MI</td>
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<td>Salt Lake City, UT (S Line)</td>
<td>Tempe, AZ</td>
<td>Hampton Roads, VA</td>
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<td>Seattle, WA (South Lake Union)</td>
<td>Washing DC (Green Line Extsn)</td>
<td>Indianapolis, IN</td>
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<tr>
<td>Tucson, AZ (TECO)</td>
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<td>Kansas City, MO (Phase 2)</td>
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Notes:


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representative of the “new investment systems” we argue are indicative of spatial planning efforts. The streetcar in Tacoma, WA was also excluded; although it uses the same technology as the Portland streetcar it is treated like a light rail system by its owner-operator, Sound Transit.

Projects were identified through multiple sources, including federal databases and documents from the 2013 Streetcar Summit hosted by the Streetcar Coalition. The current status of each project and descriptive system details were collected through websites maintained by the local streetcar providers, downtown coalitions and city governments for each project. Additional information on funding and ballot initiatives was collected from local election boards and media sources. Information on TIGER grants was collected from the TIGER website maintained by the federal DOT, as well as the websites of local government agencies that submitted TIGER applications.

5.1. Service characteristics for existing streetcars

Fundamentally, transportation investments shape land uses through changes in accessibility (Hansen, 1959) but rail investments are also thought to attract economic activity by signaling a public sector commitment to a particular geographic area (Helling, 1997). It then follows that if economic development occurs around streetcar investments, the causal explanations are either related to improved access provided by better transit service, or by the non-transport related value that attracts firms and households by signaling public sector commitment to improving the public amenities in a specific area. In this section we evaluate the transportation improvements associated with select streetcar projects. Projects were selected to be representative of the current generation of initiatives and for which data was available. Table 2 provides an overview of the transit service characteristics of existing streetcar systems, extending 2008–2011 data from Jeffrey Brown’s examination of the transit effects of streetcars (Brown, 2013). Service characteristics are evaluated using common metrics of vehicle revenue miles and vehicle revenue hours.

The seven systems show mixed results for changes in service levels, but in general service levels increased between 2008 and 2013. Memphis operates an historic streetcar that is undergoing renovations, perhaps explaining why service was cut so severely during this period. Seattle, which operates its streetcars as part of their integrated transit system, expanded streetcar service slightly—an expected outcome for a system that provides robust transit connections in an area experiencing growth pressures. Portland, which as previously mentioned is the standard for streetcars affecting economic development, increased revenue miles but reduced revenue hours.

In Table 3 the operating costs for 2010 and 2013 are shown, with total costs representing annual operating expenses. As streetcar trips tend to be relatively short the costs per unlinked passenger trip (UPT) and per passenger mile (PM) are similar for systems where the average trip distance is about a mile. Memphis and Tampa both reduced operating costs between 2010 and 2013, but these cities also reduced service. For the cities that increased streetcar service, operating costs per trip and per mile also increased. This highlights how an increase in subsidized service leads to an increase in operating expenses—the opposite of what we would expect in a system financially constrained by its fare box revenue. Operating budgets are made worse off, and operating costs are substantially higher than bus services in the same cities (Brown, 2013). The tables also highlight the large differences in UPT and PM expenses across streetcar systems.

It is common for streetcar advocates to say that developers like the permanence of rails as a key feature of why streetcar projects spur development. Unfortunately the permanence of rails doesn’t lead to the permanence of service, and the evidence on actual transit service from streetcars is mixed at best. The takeaway from these tables is that streetcars as transportation projects are not unambiguously successful. These systems are expensive to operate, which has led to many systems curtailing service, either as a reaction to slack demand or because of high operating costs. To sum, modern streetcar systems do not produce clear transportation benefits (although some of the systems do meet this standard), which can jeopardize the continued provision of high quality future service. This affects the way that streetcar projects are analyzed and financed. We turn to these issues in the following section.

5.2. Cost benefit analyses for proposed systems

The U.S. Department of Transportation TIGER grant application process requires that proposed projects include a cost benefit analysis (CBA). The Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant program was created in 2009 in part to aid in the national economic recovery. The program administers hundreds of millions of dollars annually through a competitive application process. Of the approximately $866 million spent on U.S. streetcars between 2009 and 13 $279 million, 32% was federal support through TIGER grants. Projects are scored in part based on their national economic benefits, and in part based on the ability of localities to raise matching funds. As discussed in the previous section, transportation benefits from streetcar projects are uncertain, which is reflected in the project analyses. Based on the ratio of expected benefits presented in Table 4, approximately three-quarters of all proposed streetcar benefits derive from economic development. Not only are these economic development benefits presented with a degree of certainty, the majority are calculated as property value increases which accrue to private owners. Proposed benefits from streetcar projects are large and offer high rates of return, even with high discount rates. For instance, the Cincinnati Streetcar CBA expects an internal rate of return of 6.5% (HDR, 2011). Cincinnati’s TIGER application (prepared by HDR...
consultants) defines community development measurements as “Op-
tion value and amenity value of proposed transit alignment, as mea-
sured in property appreciation (net of capitalized travel cost savings)”  
(HDR, 2011). To be clear, we are not criticizing the CBA methodology 
conducted by HDR or other consultants; streetcar CBAs conform to pre-
vailing sound practice and methods. Instead, we aim to highlight how 
benefits and costs are distributed in streetcar projects between trans-
portation and economic development. As the data in Table 4 shows, 
the bulk of benefits from modern streetcar projects are economic de-
velopment, which reviewed project documents show accrue primarily to 
property owners. This is in contrast to conventional project evaluation 
that highlights traveler benefits such as reduced travel times. From a 
cost perspective some—but not all—of the expenses are borne by the 
beneficiaries in cities relying on special assessments or TIF districts to 
fund capital and operational expenses. The extent to which these as-
sumptions will match the projected revenues is unknown, but the em-
pirical evidence discussed earlier in this paper suggests that estimates 
may not match reality. The remainder of the costs for capital and op-
erational expenses must be dispersed beyond the beneficiaries, most 
often through regressive sales tax schemes, general budget allocations 
by the city government and federal transportation grant programs. For 
this final category—federal transportation grant programs—it is unclear 
how enhanced property values in select, preferred locations align with 
national transportation priorities related to increasing transit modal 
split, reducing congestion and improving environmental outcomes.

6. Presenting streetcars to voters

Transit projects in the United States are all funded through a mix of 
public revenue sources, though as transportation funding has devolved 
in recent years (Wachs, 2003), voters have been asked to approve 
funding for an increasing variety of transit projects. Generally voter sup-
port for transit spending is far greater than transit ridership, a phenom-
ena that scholars have identified as a collective action problem where 
voters believe in the collective benefits of transit more than the individ-
ual benefits (Manville and Cummins, 2015). Yet as spatial planning tools 
with the main benefit of higher property values, modern streetcar pro-
jects cannot guarantee the realization of collective benefits—one firm’s 
higher property value is another firm’s higher rent. This is a challenge 
for streetcar supporters when presenting these projects through ballot 
initiatives, which are often required to secure a local match for federal 
grant programs.

Streetcar proposals take advantage of recent rules by the U.S. De-
artment of Transportation that promote ‘livability’ as an evaluative 
framework as well as funding arrangements aimed at helping the na-
tional economy in the wake of the Great Recession of 2007–9. This 
change in guidelines, implemented in 2009, partially explains why 
there are more streetcar projects than in previous decades. But since 
federal grant programs require substantial local matching, changes to 
Federal guidelines alone are not sufficient to explain the popularity of 
streetcar projects. If we look at these projects in their local contexts, 
what stands out are the high levels of local political support and in-
creased political cooperation that streetcars create. Streetcar projects

| Projects receiving TIGER grants for streetcar capital investment. |
|---------------------------------|------------------|-----------------|
| $ (millions) | Year | Program | Ratio of economic development/transport benefits | % total benefits from economic development |
|---------------------------------|------------------|-----------------|
| Tucson 63.0 | 2009 | TIGER I | 29.3 | 71% |
| Atlanta 47.7 | 2010 | TIGER Capital | 61.3 | 95% |
| Salt Lake City 28.0 | 2010 | TIGER Capital | 2.6 | 62% |
| Cincinnati 10.9 | 2011 | TIGER III | 7.0 | 78% |
| FT Lauderdale 18.0 | 2012 | TIGER IV | 9.8 | 86% |
| Kansas City 20.0 | 2013 | TIGER V | 18.5 | 79% |
| Average 21.4 | | | | 78% |

Source: “TIGER Discretionary Grants”, U.S. Department of Transportation website; Streetcar project websites.

have broad support from a mix of real estate interests, transit advocates, 
environmentalists, local officials, unions and construction interests. Co-
alitions of interested parties that previously were adversarial are now 
unified in support of these projects. Likewise, some streetcar projects 
(i.e. Cincinnati, OH; Arlington, VA) or proposed expansions (Kansas 
City, MO) have engendered vigorous opposition although this often cata-
lyzes after projects have passed the local approval stage.

There are a few reasons for broad local support. Although geograph-
ically constrained in the service they provide, streetcars have high sup-
port from the transit advocacy community, which tends to favor any 
project that expands access or provides alternatives to the private auto-
mobile. Unions and construction firms support large job-creating pro-
grams, whatever they may be, while streetcar locations in larger 
central business districts helps leverage support from many employers 
and elected officials. More critically, though, the opportunity costs of 
joining a pro-streetcar coalition are very low. While core proponents 
such as a Business Improvement District or single purpose advocacy 
group have a lot invested in the success of streetcars, for most other ac-
tors there are few reasons not to support an application for federal 
funds.

Local benefits do offer opportunities for closely tying infrastructure 
finance with development through value capture (Hagman and 
Mischcynski, 1978; Smith and Gihring, 2006) or local taxes. Most 
often—albeit based on state regulations—the approval of such taxation 
schemes is presented to voters through a ballot initiative. We identified 
eleven streetcars projects that were at least partially funded with taxes 
approved through local ballot initiatives, which are described in Table 5. 
In all but the Kansas City, Los Angeles and Sacramento initiatives 
streetcar projects were bundled with other transportation projects including 
bridge and road maintenance. Only a few—the three mentioned 
above—of the ballots explicitly stated that new taxes would be used 
for streetcar projects. All ballot initiatives were largely supported by 
the voters, with between 54% and 87% approval, results that are consist-
ent with trends in transportation ballot support nationally (Manville 
and Cummins, 2015). Local option taxes, particularly sales taxes, for 
transportation finance are a growing source of revenues although 
their use raises concerns about the equitable distribution of costs and 
benefits (Wachs, 2003; Schweitzer and Taylor, 2008; Taylor and 
Norton, 2009).

Three referenda—West Sacramento, Los Angeles and Kansas 
City—specifically mention that new taxes will go toward streetcar capi-
tal costs. Of these three West Sacramento was the only ballot presented 
to the entire county. Importantly, this ballot included flood provision 
improvements in addition to streetcar development. The two voter ini-
tiatives explicitly and solely for streetcar development, Los Angeles and 
Kansas City, constrained ballot voting to relatively small residential pop-
ulations proximate to the proposed investment. In both cities, votes 
were collected through a mail-in ballot process rather than the regular 
election cycle. Voter turnout was exceptionally low—19% of eligible 
voters in the Los Angeles case and 15% for Kansas City—but those that 
did cast a vote approved taxes that would largely be paid by others, 
either commercial properties or visitors to the area. In Los Angeles the 
bulk of revenues will come from commercial property taxes, even

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Table 5

<table>
<thead>
<tr>
<th>Project</th>
<th>City</th>
<th>Ballot initiative</th>
<th>Voters</th>
<th>Voic outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>McKinney Ave Streetcar Expansion</td>
<td>Dallas, TX</td>
<td>Proposition 1 (for expansion)</td>
<td>City of Dallas</td>
<td>Passed; 87.4%</td>
</tr>
<tr>
<td>S Line (Sugar House Streetcar)</td>
<td>Salt Lake City, UT</td>
<td>Proposition 3</td>
<td>Salt Lake County &amp; Utah County residents</td>
<td>Passed; 64% (Salt Lake County &amp; Utah County)</td>
</tr>
<tr>
<td>Muni F Line/Fort Mason streetcar Extension</td>
<td>San Francisco, CA</td>
<td>Proposition K (for expansion)</td>
<td>Registered voters in San Francisco City and County</td>
<td>Passed; 74.8%</td>
</tr>
<tr>
<td>Downtown Streetcar</td>
<td>Los Angeles, CA</td>
<td>Community Facilities District</td>
<td>Mail-in ballot for Residents living within CFD</td>
<td>Passed; 73%</td>
</tr>
<tr>
<td>Downtown/Riverfront Streetcar</td>
<td>Sacramento CA</td>
<td>Measure M Transportation Investment District</td>
<td>Mail-in ballot for Residents living within City of West Sacramento in Yolo County, California</td>
<td>Passed; 64%</td>
</tr>
</tbody>
</table>

Sources: Local election websites and media outlets.

Though commercial property owners were not allowed to vote and their support for the project was not clear (Guzman, 2012). In Kansas City, approved revenue for streetcar construction and operation will be raised by a combination of special property assessments and a new retail sales tax that stretches several blocks beyond the streetcar corridor. Looking more closely at the voting turnout raises serious concerns about representation and the use of local ballots as a public decision making tool. In Kansas City, only 697 voters were cast, with 351 residents voting in support of the sales tax, essentially committing the city to substantial short and long-term obligations. These ballot initiatives are purposely designed to spread the costs of the systems as broadly as possible while concentrating the benefits, which is a common strategy in transportation finance to generate political support for controversial projects (King et al., 2007). Indeed, the success of Kansas City's downtown streetcar initiative is attributed to strategic construction of the ballot voting process, which stands in contrast to previous failed ballots to build more extensive rail-based transit systems (Personal Interviews).

The data from ballot initiatives suggests that transportation projects overall—and streetcar projects more specifically—are generally supported by voters. Voter support tends to increase when spending priorities are clearly identified for new taxes, and when voters are located in proximity to new facilities (Hannay and Wachs, 2006). Taken as a whole, local transportation finance options, including for streetcars, have a strong track record of success at the ballot box. It is reasonable to wonder why if streetcars generate so much local economic value and have high probabilities for local tax support, then why they need federal financial support to the extent proponents argue as opposed to a value capture mechanism to guide increased property values to finance the systems.

Instead it seems reasonable to expect that federally funded streetcar projects should be evaluated against other national priorities for transportation spending, including projects aimed at facilitating an increased transit modal split, serving transit dependent or low-income communities or mitigating the environmental impacts of automobile travel. If streetcar investments are thought to have substantial effects on local economic development, perhaps a better funding source would be the Department of Housing and Urban Development (HUD) or a federal program that focuses more directly on fostering desirable local economic outcomes.

7. Conclusions

This paper argues that modern streetcar projects in the United States represent a turn toward spatial planning. We show that the expected benefits from streetcar projects—which are evaluated without consideration of expected system performance—accrue mostly to local property interests. This distribution of benefits is deliberate and is a departure from traditional transit planning where primary benefits accrue through improved accessibility and travel time improvements. Local economic development benefits are far from certain, however, and most often require a slate of complementary regulations and policies such as liberalized zoning.

From a more general perspective, the strategic spatial planning process of streetcars highlights a different focus for planning, similar to that observed in European cities (Olesen, 2014). The shift is complimented by a narrow common-sense discourse in which market competition—and the creation of a business friendly environment—has become a necessary (and at times the only) value in decision-making (Allmendinger and Haughton, 2012; Purcell, 2009; Sager, 2009, 2013). Referred to as the ‘growth-first approach to urban development’ (Peck and Tickell, 2002), the adoption of this framework means that certain policy objectives (i.e. improving service to low-income riders, or transit dependent populations) are deprioritized to the extent that they do not even appear on the radar of streetcar project planners. This is particularly troublesome in the United States where public transit policy is shaped by social welfare considerations, namely mobility for the carless.
whether by choice or circumstance. This mirrors the growth of spatial planning elsewhere of a gradual shift away from distributive policies, welfare considerations and direct service provision towards more market-oriented and market-dependent approaches aimed at pursuing economic promotion and competitive restructuring (Swyngedouw et al., 2002).

An unresolved concern about the spatial shift in transit planning is that the projects discussed here do not reflect long-term planning goals articulated through conventional planning processes. By creating support through local business communities and asking small groups of voters to directly approve individual projects, streetcar systems are not subject to the same level of transparency or trade-offs against other transit priorities within a region. The fact that regional transit agencies are rarely the champion of streetcars, and in many cases recuse themselves from the projects, suggests that there may be conflicting visions about how to best leverage scarce transportation resources to achieve spatial planning goals, including the geographic scale at which trade-offs and benefits should be evaluated. None of this is to say that streetcar projects should not be pursued by cities. Rather, we argue that these projects should be viewed as a turn toward spatial planning and be evaluated against other economic development strategies rather than against other transit improvements. Such a framework raises important questions about the role of federal transportation funding and whether new federal agencies should be making funds available for streetcars projects. Streetcars, as currently practiced in the United States, act as desirable amenities more than meaningful transit improvements.

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