



HOW CITIES HELP AND HINDER THE PROVISION OF SURFACE PUBLIC TRANSIT: A TRANSIT AGENCY PERSPECTIVE

By Michelle DeRobertis, Richard W. Lee, Charles R. Rivasplata, and Douglas J. Cross

PREFACE

This paper is based on research conducted for Mineta Transportation Institute, San Jose State University, USA, (DeRobertis, Ferrell & Lee 2021). An earlier version of this paper was presented as a poster at the Transportation Research Board (TRB) Annual Meeting, Washington D.C. in January 2021, (TRBAM-21-03048), which was held virtually due to the COVID 19 pandemic.

This paper is based on practices in the USA. Comments regarding how other countries deal with these issues, or conversely don't have these issues, are welcome and could form the basis of a future article. Please contact the authors.

INTRODUCTION

In many urban areas in the USA, transit providers and roadway owners are separate entities, each with its own discrete governance and management structure. In such cases, transit agencies have no direct control over the built environment, particularly the street-oriented transportation infrastructure over which they operate surface fixed-route transit (bus, BRT, streetcar, and light rail). Hence, transit agencies are dependent on the cooperation of local municipalities to permit or enable their services.

The “built” infrastructure that municipalities control includes streets and roadways upon which transit service operates as well as sidewalks and street crossings used by transit patrons to access stops and stations. Specifically, cities control the lane widths where buses operate, whether to provide a bus-only lane, how well buses can access the curb to load /unload passengers, the bus stop environment where passengers wait, and the pedestrian infrastructure needed to access transit stops and stations.

Photo credit: Stephen H., Grand Central Station, New York City, New York, USA, 2019. https://unsplash.com/photos/dF4qSZKJw_g

This research explores these many ways in which transit agencies depend on collaboration from municipal roadway owners (e.g., cities, counties, states, hereafter referred to as “cities”). The goal of this research is to encourage cities to proactively work with local transit providers to foster efficient, effective, and safe transit services.

BACKGROUND

The aim of the research project was to understand and identify the municipal practices that are helpful, and those that are not, to the provision of public transportation. The methodology involved four steps. First was a review of the literature followed by interviews of staff at five transit agencies in five different states to identify an array of issues, policies and practices. Five experts in the field were then consulted to provide input and refine the identified issues. This research concluded with detailed interviews with staff from five California cities to further refine the list of identified policies and practices and to learn whether and how they are implemented by the city. The city staff were also asked to share any other ways that they cooperate with transit agency(s) serving their communities. The final product of this research was an array of best policies and practices for municipalities so that they can be full partners with the transit agencies serving their communities.

The purpose of this paper is to present city policies and practices from the perspective of transit agencies based on the interviews of transit agency staff, essentially the first part of the research. The interviews were not meant to be a statistically valid survey, but rather were intended to reveal the range of issues that transit agencies face but that are under the control of cities.

INTERVIEW OBJECTIVES

The objective of the interviews with transit agency staff was to inquire about these broad issues:

- What are the challenges that transit agencies face in their dealings with local municipal jurisdictions within their service area?
- What practices on the part of municipalities improve transit agencies’ ability to operate efficiently and effectively on public streets?
- What are issues faced by transit agencies with respect to municipal short- and long-range planning, both for public streets and for land development?

Answers that were offered for these questions revealed representative examples of the issues that transit agencies encounter in using public infrastructure to provide their services.



Photo credit: Circe Denyer, Muni Light Rail in the City of San Francisco, California, USA.

<https://www.publicdomainpictures.net/en/view-image.php?image=251646&picture=muni-bus-san-francisco>

Table 1: Characteristics of the Five Interviewed Transit Agencies

Central City/ Cities	Transit Agency	Population of Area ⁽¹⁾	Central City Population	No. of Counties	No. of Municipalities in Service Area
Pittsburgh, Pennsylvania	Port Authority of Allegheny County	1,415,000/ 1,734,000/ 2,300,000	300,000	1	130
Minneapolis, Minnesota	Metro Transit	1,837,000/ 2,650,000/ 3,600,000	430,000	7	~75.
Denver, and Boulder, Colorado	RTD-Regional Transportation District	2,920,000/ 2,374,000/ 3,000,000	730,000 107,000	8	~55
Oakland, and Berkeley, California	AC Transit	1,425,000/ 3,281,000/ 4,700,000	435,000 120,000	Parts of 2	13
Bellingham, Washington	Whatcom Transportation Authority	220,000/ 114,000/ 220,000	90,000	1	7

⁽¹⁾ xx/yy/zz: service area / urbanized area (UZA) /metropolitan statistical area. (Note UZA may be larger than service area.)

Source: National Transit Database Agency Info, 2018; MSA population from <https://www.statista.com/>

METHODOLOGY

Transit agencies selected to be interviewed represented small, mid-size and large metropolitan areas from different regions of the U.S. The five areas are: Pittsburgh (East), Minneapolis (Upper Midwest), Denver (Mountain), Oakland-Berkeley (California), and Whatcom County, Washington (Pacific Northwest). The number of local governments served ranged from seven to over a hundred; the number of counties in the service area ranged from one (Whatcom Transportation Authority, WTA) to eight (Denver Regional Transportation District, RTD). Four metropolitan areas have populations of between two and five million, with central city populations ranging from 300,000 to 700,000. The fifth, Whatcom County, has a population of 220,000, and its largest city, Bellingham, has 90,000 inhabitants. Table 1 outlines key information about each agency and the region it serves.

The project team developed a list of questions for transit agency staff to solicit their opinions on what cities currently do that help or hinder transit the provision of transit services. The interviews, which were conducted by telephone during the first half of 2020, included specific questions but also allowed respondents the flexibility to relate their own examples of things cities do, as well as things they wish cities would do, for transit.

The questions were organized under the following topics:

- Good practices by cities on infrastructure that affects transit operations or passengers, e.g., bus-only lanes; bus stop design; curb lane management
- Good practices with respect to routine planning activities, and cooperation / collaboration between cities and transit agencies
- Funding and developer conditions, e.g., do city-imposed development conditions and traffic impact fees ever fund improvements to transit or transit services?

FINDINGS

The following describes the policies and practices revealed by the interviews that either help or hinder the provision of transit. They fall into three categories: infrastructure, planning and funding.

INFRASTRUCTURE AFFECTING BUS OPERATIONS OR PASSENGERS

The interviews first focused on infrastructure that is owned by cities, counties, and states that helps—or indeed is essential to—operating buses, street cars, and light rail vehicles. This includes infrastructure that transit passengers use when walking to or waiting for the bus. The practices that emerged from the interviews fall into the following areas:

- Transit-only rights of way and dedicated bus-only lanes
- Traffic signal treatments that help transit vehicles
- Curbside access to bus stops
- Bus stop placement and relocation
- Bus stop design from perspective of the passenger waiting area
- Layover areas
- Pedestrian access to bus stops/stations

The specific policies and practices revealed by the interviews that help or hinder transit for each of these topics are briefly presented below. It should be noted that the purpose of this research was not to provide design guidance, but rather, to list the array of strategies under city purview that would maximize the effectiveness of transit.

Transit Rights of Way and Bus-Only Lanes

Dedicated bus lanes were cited as a significant way to improve transit operations. For example, the Allegheny Port Authority (Pittsburgh, Pennsylvania region) maintains that dedicated bus lanes represent the single biggest transit amenity that cities can provide. In addition to bus-only lanes, there are other types of transit-only guideways in our interviewed agencies' jurisdictions, which came about in a variety of ways. But each type, except separated rights-of-way, require the roadway owner's permission and cooperation to implement.



Photo credit: Michelle DeRobertis, Bus in mixed travel lane in Oakland, California, USA.

The variations in form include:

- Bus-only lanes, both same direction and contraflow
- **Bus Rapid Transit (BRT)**-only lanes (stricter separation requirements from general traffic lanes)¹
- Bus-only guideway (automobiles and pedestrians prohibited)
- Transit mall — a pedestrian and bus-only street (automobiles prohibited)
- Highway shoulder use by buses
- Freeway bus lanes, either HOV lane or BRT-type separation
- Peak-hour parking restrictions for a peak-hour-only bus lane

1. Bus Rapid Transit (BRT) Standards, Institute for Transportation and Development Policy (ITDP) provides a good description of the right of way requirements for true "BRT" operations. <https://www.itdp.org>



Photo credit: Michelle DeRobertis, Transit-only lane, San Francisco, California, USA.

Traffic Signal Treatments

Several practices with respect to signalized intersections were mentioned that reduce delay to transit vehicles; all need city action or participation for implementation.

Despite their clear benefits, the interviews revealed that these practices were present at only a few intersections, if at all, even on light rail corridors:

- Transit Signal Priority (TSP) for transit vehicles helps improve travel time and schedule maintenance. TSP equips transit vehicles (buses, street cars or light rail vehicles), with an “emitter,” which automatically requests a green phase extension.
- Queue jump lanes help reduce delay to buses. By allowing buses to bypass the queue of cars to go straight—such as through use of the right-turn only lane or in a dedicated bus-only space—bus delay at signalized intersections can be reduced substantially.
- Traffic signal timing and coordination plans are designed to consider transit travel speeds, or better yet, to be overtly designed for transit.

Curb Lanes and Bus Access to the Curbside

The curb is a space in heavy demand, particularly in urban areas, but also in suburban contexts. A Minneapolis transit planner noted that road owners (city, county, or state) have ultimate control over the curb lane and that, given the many and various types of curbside activities, the function of curbside space was quite different from the roadway lane. Whereas the purpose of the travel lane is to facilitate flow, the roadside curb space serves many functions—bus stops, on-street parking, deliveries, passenger loading

(official or unofficial), bicycle travel, driveway cuts, parklets and pedestrian bulb-outs, not to mention general traffic lanes, either through lanes or right-turn lanes, and occasionally, streetcar tracks or a bus-only lane. Thus, there is a substantial demand and competition for the space.

A common theme among the interviewees was the difficulty that space-constricted stops present. Regardless of the other curbside demands, buses still need to be able to pull into and out of the curbside bus stop. In particular, bus stops need to be long enough so that on-street parking does not interfere, which is especially problematic for near-side stops. Enabling the bus to pull parallel to the curb not only facilitates boarding for disabled passengers, but also ensures safe egress for all passengers from all doors onto the sidewalk. There is also the separate issue of utility poles, sign posts, and other city-permitted street furniture that can interfere with egress from vehicle doorways.

The interviewees provided good and bad examples of city cooperation. For example, Hennepin Avenue, a major Minneapolis thoroughfare, was cited as a good example—the roadway owner allowed Metro Transit to put in a bus-only lane. However, elsewhere in the city, when the transit agency requested parking be removed to facilitate access to the bus stop, there was resistance. Despite the substantial benefits to bus operations, several interviewees reported that cities often resist removing parking, especially metered spaces.



Photo credit: Michelle DeRobertis, narrow sidewalk in New York shared by pedestrians, bus passengers and trees.

An example of a practice that hindered good transit operations was one city's policy to request reimbursement from the transit agency for lost parking meter revenue resulting from the elimination of parking to lengthen the bus stop.

The challenge of managing the curb lane for multiple modes often comes at a price for bus service. The value of bus bulbs, where the sidewalk is extended into the travel lane so that the bus does not need to pull over, is well established (Fitzpatrick et al 2009, Transport for London 2017). Similarly, pedestrian bulb-outs have effectively made pedestrians more visible and shortened street crossing distances. However, several transit agency planners cited examples where new pedestrian bulb-outs were placed near a bus stop without consulting the transit agency. The resulting crosswalk in the middle of a bus stop necessitated relocation of the bus stop and other retrofits. This example illustrates the importance of the city coordinating with the transit agency when modifying the roadway on a bus route. In sum, access to curbside bus stops is essential for bus operations. Moreover, a location where a bus can pull fully parallel to the curb is essential for proper wheelchair boarding and for the safety of all passengers as well as mobility-impaired passengers. But such curb side access is not within the direct control of the transit agency, but rather that of the city.

The following good city practices were identified in our interviews:

Bus bulbs at bus stops

Bus bulbs circumvent the problem of buses pulling in and out of a bus stop by allowing the bus to stop in the travel lane; the bus does not lose time pulling into the stop and then merging back into traffic. One planner noted that when there is no parking lane, the bus already travels in the curbside lane, which provides the same benefit as a bus bulb.

Transit boarding islands

Transit boarding islands help transit vehicles in the same way as bus bulbs—buses do not have to pull into and out of curbside bus stops. They are particularly appropriate in two situations:

1. To board street cars and light rail vehicles that cannot pull to the curb.
2. To locate the bus stop outside of a protected bike lane.

Other policies to help buses access the bus stop

The interviewees suggested the following best practices:

- Ordinance or policy to prohibit on-street parking too close to a bus stop.
- City policy to proactively provide full-length bus stops.
- City policy to prohibit parking at bus stops, when requested by the transit agency.
- City-adopted bus stop standards, either the transit agency's or the city's own, created in conjunction with the transit agency.



Photo credit: Michelle DeRobertis, Bus Bulb.



Photo credit: Michelle DeRobertis, BRT-only lane & Boarding Island, Cleveland, Ohio, USA.

Bus Stop Placement

The above discussion addressed access to existing curbside bus and streetcar stops, but choosing where along a street or corridor to place a bus stop involves several decisions that are within the purview of the city. Issues include the selection of the actual physical location and the overall planning process for siting new and relocated bus stops.

Here, appropriate practices revealed from the interviews include:

- City cooperates and provides quick response time when transit agency requests to relocate a bus stop at the same intersection or nearby, e.g. near-side to far-side.
- City is involved in and helpful when the transit agency asks for a new or relocated bus stop (e.g., a few blocks away, or on a new route alignment).
- Pedestrian access: for new and relocated bus stops, city is involved in the review of pedestrian street crossings that access the bus stop, including the need for new or enhanced pedestrian crossing traffic control devices.
- In conjunction with the transit agency, city adopts a bus stop location policy.

Compliance with Americans with Disabilities Act (ADA)

Under the U.S. federal requirements of ADA, all buses need to be wheelchair accessible (along with other accessibility requirements), but passenger boarding of buses requires the use of city-controlled rights-of-way, such as sidewalks.

Some transit agency staff noted that ensuring compliance with ADA requirements can consume a great deal of resources; however, by law, it is a regulatory responsibility that government agencies must keep up with. They expressed the sentiment that city involvement could reduce the onus on transit agency staff and facilitate compliance.

Relevant city practices identified include:

- City involvement in the review of new bus stops to assess ADA compliance, including landing pad provision, assessment of obstructions to egress from bus doors, and assessment of nearby sidewalks for path-of-travel obstructions.
- For existing bus stops, address access to stops in federally-required ADA Transition Plans.
- Prioritization of transit-agency-identified needs for ADA features in cities' ADA Transition Plans, (e.g. those obtained through transit customer requests or vehicle operator/supervisor observations).

Passenger Waiting Area at Bus Stops: Design and Amenities

Bus stops also include passenger waiting areas which are located on city-controlled sidewalks or roadway shoulders. Consequently, the transit agency needs to contact the city for permission to do anything at a bus stop, including those measures that would improve passenger safety and comfort. In addition, the city is the entity that sets requirements for sidewalk width and building setbacks, which affect whether and how amenities can be physically accommodated at bus stops (e.g., ADA landing pads, shelters, benches).

One interviewee suggested that bus stop improvements be part of the scope of work for any roadway infrastructure project, since this would be the most cost-effective way to provide additional space back-of-curb for such amenities.

Good practices include:

- City adopts standard specifications for bus stops that include wide sidewalks to accommodate such features as a shelter, an ADA loading pad and an electrical conduit, (developed in cooperation with the transit agency). In addition, the city enforces and monitors these specifications.
- City provides a mechanism for passengers to report bus stop issues (e.g., maintenance).
- City manages or coordinates a bus shelter program, in coordination with the transit agency. (This is often financed through an advertising conglomerate that provides shelters in exchange for ad revenue; the drawback is that often potential advertising revenue drives the design and/or location of the shelter).
- City includes transit stop improvements as a routine part of the scope of work for roadway repaving or reconstruction projects (at least adequate space for amenities, if not the amenities themselves).
- City takes responsibility for providing and maintaining passenger amenities at bus stops to promote passenger comfort and safety, including benches, trash cans, and street lighting.
- City conducts inventories and develops an improvement plan or otherwise has a policy and program to proactively evaluate bus stops.

Layover Areas

Transit agencies need a designated place where buses can lay over at the end of each trip and before the next one. This can occur on public or private property, but locations typically need to meet certain conditions, e.g., near a restroom and where a parked bus will not interfere with traffic (including other buses) and pedestrians. The general good practice is for city staff to recognize that it is a significant issue, facilitate arrangements for using city property where appropriate, and to support transit agencies when they need to negotiate with private property owners.

Pedestrian Access to Bus Stops and Rail Stations

Facilitating safe and convenient pedestrian access to bus stops and transit stations is an important consideration that falls outside the direct control of the transit agency. One transit planner said that providing safe and comfortable pedestrian access is a key foundation for how well transit functions. It should be noted that access to transit applies to modes other than just surface transit, such as commuter rail, subways and ferries, since their passengers also use city streets and sidewalks to access the stations and terminals.

Good practices include the following:

- Sidewalk and intersection inventories and improvement programs along routes that access transit stops (e.g., sidewalk maintenance, and traffic control devices to facilitate pedestrian crossings).
- Improved bicycle access to transit stops and stations.
- Pedestrian-scale lighting along main walk routes to bus stops.
- Secure bike parking, especially at LRT and regional transit stations.

A particular issue came up regarding sidewalk maintenance. In many cities, the responsibility for sidewalk maintenance, from leaf and snow removal to repairs of broken concrete, falls to the adjacent property owner, even though sidewalks are open to the public.



Photo credit: Douglas J. Cross, Bicycles are key for transit access, particularly to rail stations, Dresden, Germany.

For example, the City of Philadelphia only owns the sidewalks in the "original" part of the city before the 1854 City-County consolidation; this is a very small part of the City—the historic core and the CBD². More typical may be San Francisco, where the adjacent property owner is always responsible for sidewalk repairs, (except where a city facility or project damages it), and is enforced through city ordinances³. However, whether they own them or not, cities are ultimately in control of sidewalks, from setting minimum width and location standards to enforcing their maintenance.

One transit agency interviewee advocated for cities to assume responsibility to maintain sidewalks that access bus stops, at least major stops. The transit agency representative felt strongly that this would be a tremendous help, particularly on principal transit corridors.

TRANSIT CONSIDERATIONS IN ALL PLANNING AND OTHER CITY ACTIVITIES

In the interviews, questions were posed to measure the extent to which, from the perspective of the transit agency, city staff understand and acknowledge transit needs and their connection to roadway planning activities. The interviews yielded several desirable practices that cities can adopt to include transit agencies in internal city planning activities regarding streets and sidewalks. These have been separated into the following subcategories:

City Staff and Transit Planning Activities

With the exception of some of the larger cities, transit agency staff reported that few local jurisdictions in their service areas had staff assigned to addressing transit service infrastructure needs. Transit agency staff agreed that, of all the internal practices that cities could adopt that would help them, the most effective was having city staff involved in transit-related tasks.

The following helpful practices with respect to City staff were identified:

- **Dedicated Staff** – City has a dedicated person(s) with transit responsibilities. These responsibilities could be codified in the position title and/or job description.

- **Transit-Specific Grants** – City staff applies for grants that are specifically for transit. The grant applications can be a one-time project or a routine practice during every grant cycle. For example, according to an interviewee, the City of Minneapolis applied for and received funding from American Cities Climate Challenge to implement new bus-only lanes on its streets.
- **Transit Planning Activities** – City staff initiates and conducts planning activities that benefit transit operations and passengers. Agency staff agreed that it would be optimal if there were city staff whose duties included such things as evaluating bus stop conditions and amenities and ensuring that there were safe pedestrian and biking routes to transit such as sidewalks, signals to cross the street to access bus stops, etc. Two examples from our interviews were:
 1. Pittsburgh, Pennsylvania which manages the new bus shelter installation program.
 2. City of Alameda California, whose staff conducted inventories of all bus stops to better accommodate soon-to-be-acquired three-door buses.

Routine Planning Activities Incorporate Transit Considerations

Good city practices include incorporating transit issues and transit needs into all transportation planning activities affecting transit vehicles or transit passengers (e.g. short and long-range transportation plans, pedestrian plans, roadway improvements).

Transportation Planning Documents

Good practice is for all short and long-range transportation plans to include a robust transit element, e.g. in the Circulation Element of the General Plan and in Specific Plans.

Transit Plans and Transit Sections of Other Plans

Many cities do not incorporate transit into overall transportation planning, resulting in the absence of transit in basic planning documents. A good practice is to proactively develop a short and long-range transit plan, in conjunction with the relevant local and regional transit providers. Another is to include transit sections in other transportation plans.

2. Correspondence with Christopher Puchalsky, City of Philadelphia. October 9, 2020.
3. Correspondence with Ricardo Olea, City Traffic Engineer, San Francisco Municipal Transportation Agency (SFMTA) on November 4, 2020.

Pedestrian Planning Includes Transit Access

Good practice is to ensure that transit access is considered in all pedestrian planning activities, such as pedestrian plans, or prepare a combined transit-pedestrian plan and to involve the transit agency in developing the scope of work, development of scoring criteria and plan recommendations.

Roadway Improvements and Roadway Construction

Since buses operate on roadways that are owned and maintained by others, activities that affect roadways can adversely impact transit. The interviews revealed examples of good practices that minimize the adverse impact on transit operations. Interviewees, particularly from WTA and Metro Transit, cited many instances where cities involved transit agency staff in the process of planning road work that affected transit routes or bus stops.

Good staff practices could include:

- City staff inform and involve the transit agency(s) in any planned changes to roadways that have transit routes and that could affect transit stops. This includes all major and minor roadway projects, from restriping and reconstruction to bikeways to bulb-outs at intersections.
- City requires the contractor to maintain access to bus stops when there is construction that affects the sidewalk or bus stop; e.g. City of Minneapolis makes sure that contractor maintains pedestrian access on all affected sidewalks.
- If roadwork necessitates bus detours, the cost of planning/implementing the detour is included in the scope of work and the transit agency is reimbursed.
- As mentioned above (“Passenger waiting areas at bus stops” section), a desired good practice is for bus stop improvements to a specified standard are included in the scope of work of all street repaving and reconstruction projects.

To illustrate the need for involving the transit agency, several interviewees cited instances in which the lack of coordination resulted in unfavorable conditions for transit operation and compromised bus passenger safety. For example, when one city installed a separated bike lane (Caltrans Class IV bikeway) on a thoroughfare that also was a major transit route, the final design prevented buses from gaining access to curbside bus stops and as a result, transit patrons were required either to cross the bike and parking lane to board the bus, or wait in the travel lane

for the bus. In response to this issue, the City retrofitted boarding islands, and even the retrofit was not ideal. It would have been better if the transit agency had been part of the project planning team from the outset, ensuring that the boarding islands were safe and ADA compliant.

Another example of lack of coordination was when a local jurisdiction hurriedly installed a pedestrian bulb-out with bollards at an unsignalized intersection to improve pedestrian safety. The bulb-out was located within the bus stop zone, forcing buses to stop in the crosswalk. The transit agency was not consulted and was not involved in finding a solution, even though it directly affected the ability of buses to pull into the bus stop. In this case, attempting to address one pedestrian safety problem caused another. Early communication with the transit agency would have avoided adverse impacts on transit and would not have put transit passengers at risk when boarding and alighting. This example illustrates how adopted guidelines can help transit agencies educate city staff on how their decisions will affect transit.

Consideration and Integration of Transit with the City’s Roadway and Transportation Network

Transit operates on city streets; however, cities have multiple types of roadway users and priorities. From the transit agency perspective, it seems that some city staff consider transit a wholly separate transportation network and not within the city’s purview, often resulting in an “us vs. them” attitude. For example, there is still a considerable disconnect between transit and bicycle planning in many jurisdictions. The Complete Streets movement has engaged many cities in the reallocation of roadway space for bicyclists and pedestrians, however, many cities still ignore transit when juggling the multiple modes that must be accommodated. Thus, road space reallocation projects such as road diets routinely consider bicyclists and pedestrians, but not always bus needs. One transit agency planner commented that cities are at long last taking bikes seriously, but often transit operations are not considered. Thus, bike lanes are frequently implemented, while bus lanes are not.

One example where transit was not considered in a roadway redesign was a corridor where the city wanted to improve pedestrian safety and crossings, especially given the number of schools in the corridor.

The city implemented a standard road diet and bike lanes were added. To facilitate pedestrian crossings, they added stop signs at many intersections along the corridor; however, this resulted in significant increases in bus travel time. The transit agency had been considering implementing enhanced bus service in this corridor, but that it is no longer feasible. An overarching problem is that **none** of the streets in the city have been prioritized for bus travel.

This example illustrates how cities have difficulty balancing transit with bikeway priorities. It is good practice to have transit be considered the priority mode on at least some if not all trunk transit routes, since transit vehicles have **no choice but to operate there**. This has effectively been done in San Francisco and is consistent with the growing trend to consider land use context and transportation characteristics in the planning and design of city streets, instead of solely the standard “arterial, collector, local street” classifications. It has been adopted from Boston to Seattle as well as many smaller cities (NACTO 2013).

Good practices adopted by cities to support this policy include the following actions:

- Designate certain streets / corridors as transit-priority or preferential routes. Since buses only use certain streets, this could readily be incorporated into bicycle plans.
- City Complete Streets policy that specifically mentions transit and incorporates transit lanes into complete streets projects.
- In all road space reallocation projects, city includes the evaluation of providing bus-only lanes; assesses the adverse impact of road diets without bus-only lanes on bus travel times; and identifies ways to mitigate any adverse impacts.

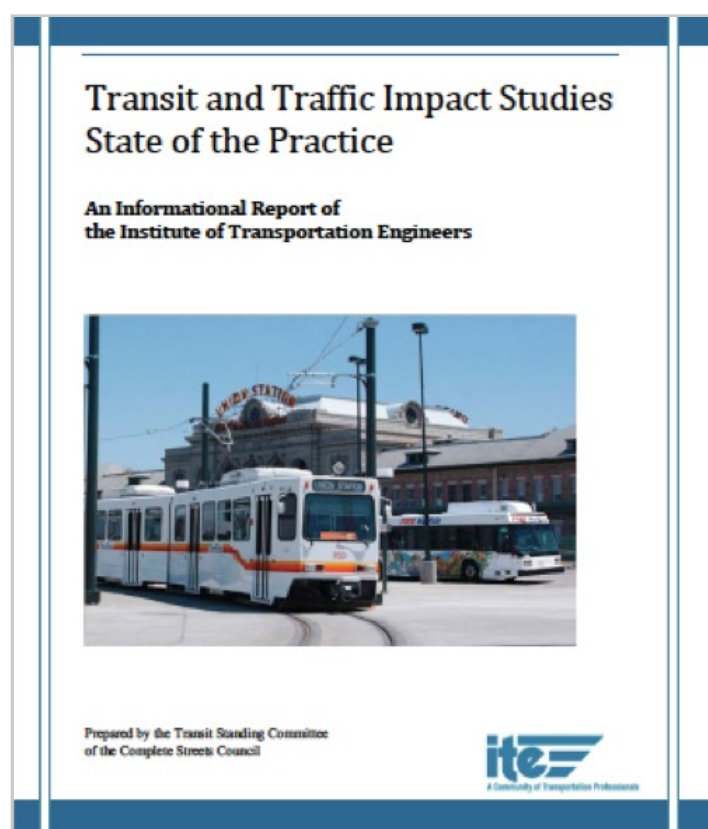
Development Review and Zoning

Cities have primary authority over local land development. There are good practices in the development review process that can immensely help transit operations, such as the following:

Consideration of Transit in Traffic Impact Studies

The recently published Institute of Transportation Engineers (ITE) “State of the Practice Report on Transit and Traffic Impact Studies (TIS)” (ITE 2019) revealed many transit issues that should be considered in a TIS.

In alignment with the ITE report, the interviews included questions as to whether/how transit was considered in TIS conducted in their service areas. The interviews revealed that the TIS generally focus on vehicular traffic and its impact on intersection and roadway capacity. When transit is included as part of a TIS, the analysis is often cursory, examining whether the new development will cause crowding on buses. While transit improvement projects funded by developer or traffic impact fees are not unheard of, these are generally limited to large projects. Transit improvements are commonly negotiated on a case-by-case basis, if at all.



An AC Transit planner noted that under state legislation passed in 2013 (Senate Bill 743), California is moving from roadway Level of Service (LOS) to Vehicle Miles Traveled (VMT) as the primary criteria for measuring transportation impact. Auto LOS analysis focused project mitigations on roadway improvement for cars, while impacts on transit and other modes were ignored. In contrast, SB 743 promotes walking, biking, and transit as mitigation measures and thus, appears to benefit transit and “active” modes. However, SB743 allows developments to provide little or no mitigation if they are in areas with VMTs below the jurisdictional average.

As a result, many transit-rich areas fall in such “no mitigation required” zones.

The interviews revealed a few good practices, including:

- TIS addresses whether there is a direct pedestrian path between the project site and the nearest bus stops and stations.
- TIS evaluates bus stops for features and amenities, such as bus shelters, wheelchair accessibility, benches and lighting.
- TIS assesses impacts of construction activities on transit, e.g. will buses be rerouted or will bus stops be temporarily closed or relocated?

Site Plan Review

Another stage of the development process is site plan review. The cities of both Minneapolis and St. Paul closely involve Metro Transit in the entire site plan review process such as all meetings and correspondence. Issues are identified early and if, for example, bus stops are affected, a condition of approval can require that the project be responsible for public noticing and for the costs of relocating the bus stop. Other interviewees cited the desire to at least be given an opportunity to review site plans.

Developer Conditions of Approval and Development Fees

Related to TIS and site plan review is the practice of imposing “conditions of approval”. Again, WTA and the process that Metro Transit has with Minneapolis and St. Paul revealed good practices for practices that relate to transit operations and bus stops.

Good practices identified include:

- New developments are required to buy transit passes, such as for employees or for residents of large residential developments.
- If Transportation Demand Management (TDM) plans are required, they include elements that improve transit operations; (unfortunately more often than not, they only fund transit passes, but provide nothing to improve transit service).
- A monitoring plan is implemented for such conditions of approval, particularly for the TDM plan’s many components.
- Developers are required to talk to the transit agency about their site frontage with respect to bus stop location and design. As a condition of approval, developers fund transit stop improvements on project frontage.

- Developers must evaluate safe access from their sites to and from transit stops and to pay for any improvements (e.g., well-placed crosswalks, traffic signals, pedestrian bridges or tunnels that would shorten the walk distance between stops and the project site).
- Large developments with new streets include (and pay for) well-designed bus stops (e.g., with benches, lighting, shelters).
- If the sidewalk is closed during construction, pedestrian access to bus stops is maintained.
- If a bus stop is relocated or temporarily closed during construction, the project funds the noticing of the relocated bus stops.
- Project-specific conditions of approval facilitate project-generated person-trips to be taken by transit, such as when the project site is beyond the nearest transit line.

A recently missed opportunity was a new delivery distribution center that was built miles from transit. The multi-billion-dollar corporation wanted the transit agency to provide a shuttle to the nearest light rail station but did not offer to pay for it, and the city did not require them to. Other examples are special events (e.g., large concerts and professional sports games), which need significant additional transit capacity on an irregular basis. This additional transit service involves extra staff, not just to operate vehicles, but to assist with crowd control and to act as transit ambassadors. (DeRobertis, Lee & Kala, 2017) Good city practice would be to require that the event organizer compensate the transit agency for the significant additional labor costs incurred.



Photo credit: Bess Gaby, Bus Lane, Lisbon, Portugal, 2022.

FUNDING STRATEGIES FOR TRANSIT

All the transit agencies interviewed for this study provide transit service to multiple jurisdictions, typically funded with a mix of district-wide sales and/or property taxes, state aid, and fare revenue. The staff were asked if they received direct revenue for general operations from any of the almost 300 cities and counties collectively served by them, and all replied no. This illustrates one drawback of the multi-jurisdictional model common to transit agencies in the U.S.: no single city wants to provide additional funding to serve other jurisdictions⁴. One county had a small percentage of sales tax revenue go to transportation and in the past, one-third of this went to Sunday service for transit, but this has been discontinued. Nevertheless, three main strategies were found under city control to bring more funding to transit agencies:

Supplementary Service

One jurisdiction, Boulder Colorado, provides funding to RTD to operate **additional** service within the City above RTD service frequency standards. For example, it pays RTD to operate Route BOUND on a 10-minute weekday headway instead of the RTD practice of 15-minute service.

Transportation Impact Fees/ Pro Rata Share Districts/ Special Benefit Districts

Although many cities in the U.S. have developed traffic impact fees to fund new and expanded roads and for new traffic signals and signal coordination systems, few of the municipalities served by the interviewees had such fees and **none funded public transit**. Many U.S. municipalities are recognizing the need to provide funds for transit, bicycle and pedestrian projects as well as roadways through such areawide fees. Thus, funding mechanisms are evolving and today there are Special Assessment Districts, Transportation Benefit Districts, Pro-Rata Share Districts⁵ (ITE 2019 and even transit-specific mechanisms, such as Transit Development Impact Fees (TCRP 2006, City of San Francisco 2004). Interviewees agreed that it would be helpful to transit agencies to include transit needs—both capital and operating—in these expenditure plans. Given their capital-intensive nature, this should include long-range transit needs (e.g., new and expanded commuter rail, light rail, and metro/heavy rail).



Photo credit: Josh Couch, Trip to New York City, 2017.

Bulk Fare Ticket Purchases

When asked about innovative funding sources, several agency planners mentioned institutional bulk fare programs, which are typically implemented at universities and other large employers. Often the additional revenue enables the transit agency to increase service to the site in question, such as the university. Under these programs, all affiliated persons (e.g. students, staff, and employees) receive a transit pass that enables them to ride for free. One model is for the university or employer to annually pay the transit agency for the passes at a reduced “bulk” rate and the actual amount paid is based on audited ridership, which usually increases over time.

4. Whether or not such a multi-jurisdictional model is ideal or even inevitable, given the U.S. urbanized landscape characterized by varying extents of suburban sprawl, is not within the scope of this research.
5. A PSD is “a geographic area defined for the purpose of securing needed improvements to transportation facilities in that area. Developers in the district are required to pay toward the cost of those improvements in proportion to how much they create the need for those improvements”. Recommended Practice on Multimodal Transportation Impact Analysis (MTIA). Institute of Transportation Engineers, Washington D.C. Anticipated publication December 2020.

SUMMARY AND OBSERVATIONS

The primary objective of this paper was to identify—from the perspective of the transit agency—how cities can facilitate the provision of efficient transit service. Many city practices were identified that exemplified good coordination between the local government and the transit agency. A city that recognizes that transit is an integral part of the whole transportation network also tends to proactively cooperate with the transit agency to implement practices within city purview. The agency interviews found such practices in built infrastructure, planning policies and in attitude.

City Practices that Help Transit

The transit-friendly policies and practices that are within the purview of cities and other road owners fall in the following areas:

- Infrastructure for buses, including bus lanes, signal treatments, curbside access, and layover areas.
- Infrastructure for pedestrians walking to transit stops and stations and waiting for transit vehicles.
- Internal city transportation planning policies and practices including staff that has some transit responsibilities.
- Development review policies, including requirements for Traffic Impact Studies and conditions of approval.
- Funding strategies and mechanisms that benefit transit.

“Us versus Them”

A general conclusion is that most of the interviewees experience an “Us vs. Them” relationship with at least some of the cities they serve; (“Us:City:cars” and “Them:transit agency:buses”). The “Us vs. Them” mindset of city staff essentially sets the stage for the range of policies and practices that cities control that can help or hinder transit operations. Many municipalities, particularly suburban locations, consider auto flow, not transit, their primary sphere of duty. Thus, decisions are made from the perspective of what is best for automobile flow and LOS. Rarely were bus operating needs on city streets as important as those for cars or even bicycles. One planner stated that cities in the service area do not necessarily intend to hinder transit. However, in practice, auto traffic engineering concerns often prevail at the expense of transit operations.

The notable exception of the five interviews was WTA, which serves a county of 220,000 inhabitants. The WTA planner stated that they received excellent cooperation and consideration from the City of Bellingham, (population 90,000). The city staff perceived bus transportation as integral to the transportation network as automobiles, bicycling and pedestrians.

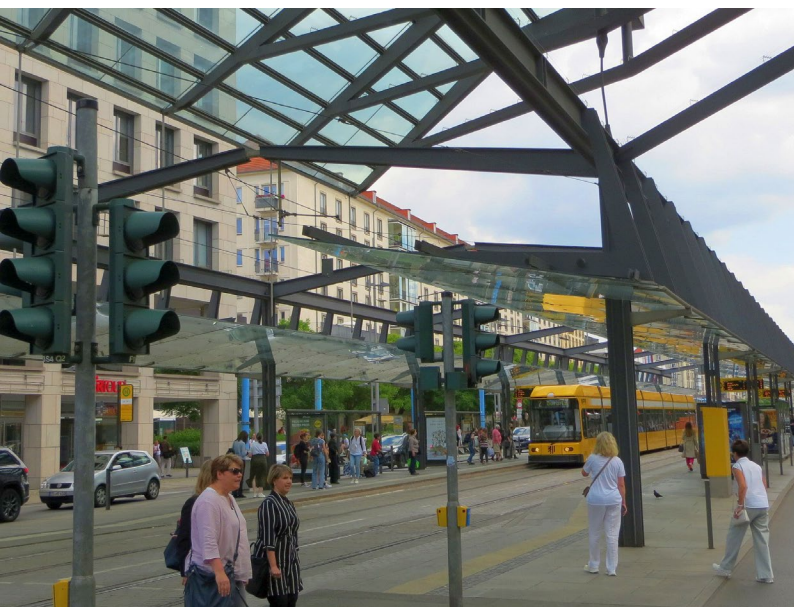


Photo credit: Douglas J. Cross, covered passenger waiting areas in Dresden, Germany.



Photo credit: Michelle DeRobertis, passenger waiting areas with bicycles in Freiburg, Germany.



Photo credit: Michelle DeRobertis, Freiburg, Germany.

Future Research

The full research project, MTI Report 21-09, supplemented the transit agency interviews with a review of the literature and input from a panel of experts. Over one hundred city practices that help transit were identified. Five cities were then interviewed to determine whether they had implemented and /or institutionalized any of these practices. **Based on these findings, the MTI research report also identified several avenues of future research needs, including:**

- Identify the most important practices and develop a Best Practices Handbook.
- Differentiate between practices appropriate for large cities versus smaller cities.
- Do cities that run their own transit agency as a city department have lessons for cities where transit is provided by a special district?⁶
- Determine best practices regarding whether and how cities are directing developer fees to fund public transit.

CONCLUSION

In the provision of urban services, many government agencies are involved with their delivery besides the city itself. In the area of transportation, public transit agencies, often a separate agency from the city, provide essential services using city streets.

Whether cities acknowledge it or not, key elements of transit service are under city control such as travel lanes, the curb-lane environment and sidewalks. Thus, cities must recognize how their decisions, policies and practices can help or hinder efficient transit services.

There are always competing interests among modes (cars, bicyclists, pedestrians, buses, streetcars, light rail and parking) in the use of roadways and of curbside space. The allocation of space among these competing interests is in the purview of the roadway owner, and transit vehicle operations are one of many functions that need to be incorporated. When the responsibility for providing transit service lies with an “outside” agency, i.e., is not part of the city (or county or state) organizational structure, functions under city purview tend to get priority. A transit-friendly city, however, will consider the needs of transit service and its passengers on a level playing field with other modes. Consideration and implementation of the types of policies and practices identified in this report will help cities to do so.

6. In California, City-owned transit agencies are more common in small cities in rural counties such as Petaluma, California (population 60,000), than in medium to large metropolitan areas with wall-to-wall suburbs. However, two examples of large California cities that own and operate the public transit system as a city department are the City and County of San Francisco (population 880,000) and the City of Fresno (population 522,000).

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Photo credit: Michelle DeRobertis, Freiburg, Germany.

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Author Details:

Michelle DeRobertis, PhD, P.E. is one of the founding principals of Transportation Choices for Sustainable Communities, a Research Associate at the Mineta Transportation Institute at San Jose State University, California, USA and Editor of WTPP. She served as Principal Investigator for this research; she was lead author of the TRB paper and this update.

Corresponding author email: M.DerobertisPE@gmail.com

Richard W. Lee, PhD is a principal with Transportation Choices for Sustainable Communities; he is also a Research Associate at the Mineta Transportation Institute, and a lecturer in the Urban and Regional Planning Department at San Jose State University, California, USA. Dr. Lee contributed to data collection and analysis for the research project and to the manuscript preparation of the TRB paper.

E-Mail: richard.lee@sjsu.edu

Charles R. Rivasplata, PhD is Treasurer and Principal with Transportation Choices for Sustainable Communities and a lecturer in the Urban and Regional Planning Department at San Jose State University, California. Dr Rivasplata contributed to the manuscript preparation of the TRB paper.

E-Mail: charles.rivasplata@sjsu.edu

Douglas J. Cross recently retired from a 43-year career in public and private passenger transportation planning, operations, and management. This included being an independent consultant from 2004 until 2022. He holds a Bachelor of Urban Planning degree from the School of Planning at the University of Cincinnati. Mr. Cross served primarily as an editor for the TRB paper.