

# TRANSPORTATION SOLUTIONS FOR CONGESTED “BOOMTOWN” CITIES

Connor Harris

Fellow



MI

## About the Author



**Connor Harris** is a fellow at the Manhattan Institute, where he focuses on infrastructure, transportation, and housing policy. His writing has appeared in publications such as *City Journal*, the *New York Post*, and the *Harvard Political Review*. Harris graduated from Harvard University in 2016 with a B.A. in mathematics and physics.

# Contents

Executive Summary.....	4
Introduction.....	5
Freeway Expansions and Light Rail: Expensive and Inefficient .....	5
Four Ways to Improve Transportation .....	6
Case Studies .....	8
Conclusion .....	14
Endnotes.....	15

## Executive Summary

Several cities—especially in the South and Southwest—have seen significant population growth recently, in part as a result of the Covid-19 pandemic. These “boomtowns,” such as Atlanta and Dallas, typically have weak mass transit and near-universal car dependency and therefore face significant challenges in expanding transportation capacity. Even with continued growth, they will not be dense enough to support large-scale mass transit. Nor is expanding freeways an easy solution because often the most congested roads are in traditional downtowns, where the cost of expansion is highest. Older urban freeways typically have little marginal land to allow expansion, and dense development nearby makes eminent domain expensive and politically controversial.

Some sprawling metropolitan areas have instead—or, in some cases, also—built extensive light rail systems, hoping to entice drivers out of their cars. But light rail systems often have very low ridership, and many trips take as long or longer than they would with a car.

In this report, I will discuss four other ways that boomtown cities can improve transportation capacity: simple improvements to surface road networks, rationalizing public transit networks, introducing market mechanisms to road traffic, and urban design. Then I will present five case studies of the current transportation infrastructure, as well as recommendations for future improvement, in Dallas–Ft. Worth, Texas; Austin, Texas; Atlanta, Georgia; Tampa, Florida and Denver, Colorado.

# TRANSPORTATION SOLUTIONS FOR CONGESTED “BOOMTOWN” CITIES

## Introduction

The COVID-19 pandemic has accelerated population growth in “boomtown” cities, such as Atlanta and Dallas. These cities, many of which are in the South and Southwest, typically share a few distinguishing characteristics. They have weak mass transit and near-universal car dependency. They also have almost exclusive single-family housing, with new housing growth coming about via horizontal expansion, with limited redevelopment of denser areas. And employment is dispersed, with many jobs in legacy downtown areas but the majority of jobs, even white-collar ones, in other “edge city” developments.

For these reasons, boomtown cities face a transportation challenge: they are too low-density for viable large-scale mass transit, and will remain so for decades, even if all future population growth occurs in already built-up areas. But the other option, expanding freeways, presents its own challenges. The most congested freeways are those in traditional downtowns, which are still typically the densest areas with the largest job clusters, and a disproportionate share of trips from one point in a metro area to another will pass through or near city centers as a matter of pure geometry. These freeways are therefore most in need of expansion but are also the most difficult to upgrade. Older urban freeways typically have little marginal land to allow expansion, and dense development nearby makes eminent domain expensive and politically controversial. Adding to the difficulty is that many near-downtown areas in cities have seen substantial revitalization driven by increased preference for urban living, so disrupting these areas with new freeway construction is both expensive and undesirable.

Most urban economies confronting these challenges decentralize, sending job growth from central to peripheral areas—a shift in economic geography that can harm low-income workers. Most metropolitan areas have strong economic segregation, with wealthy suburbs clustered in a “favored quarter” on the same side of the city center.<sup>1</sup> Areas in the favored quarter are thus less accessible than city-center jobs for working-class residents in other residential areas—especially for transit-dependent residents.

How have local political leaders, activists, and transportation departments handled this challenge? Save for a few notable exceptions, with one of two approaches: unimaginative freeway expansion; or building new mass transit, usually light rail, in the hope of luring residents out of their cars. Both approaches should be critically examined.

## Freeway Expansions and Light Rail: Expensive and Inefficient

Many fast-growing cities have invested in large freeway expansions. These can be loosely separated into two types: peripheral and center-city. Peripheral freeway expansions are in lower-density areas, typically reuse land already owned by local departments of transportation, and are relatively cheap.

Center-city freeway expansions are more important and more difficult. Even in areas with widely dispersed employment, traditional downtowns are still important job centers, and a large fraction of trips between different points in the metropolitan area must pass through or near them. But downtown freeway expansions tend to be very expensive because land values in downtowns are high and expansions often require demolishing exist-

ing structures. Also, interchanges near city centers are often structurally complex. For example, an expansion of just a few miles of Austin’s I-35 freeway through downtown is projected to cost \$8 billion; a realignment of Interstate 10 in Houston, likewise, is estimated at \$7 billion and will require the displacement of several thousand residents.

Some sprawling metropolitan areas have instead—or, in some cases, also—built extensive light rail systems, hoping to entice drivers out of their cars. Dallas, for instance, is a poster child for suburban sprawl; yet it has a 93-mile light rail system connecting the city and many of its suburbs (almost as long as Chicago’s L). Most of these light rail systems see extremely low ridership: Dallas Area Rapid Transit (DART), for instance, saw only about 1,000 average weekday riders per mile of system length in 2019—less than one-fourth the ridership of San Francisco’s Muni light rail system, which serves a much more built-up area.<sup>2</sup>

Light rail planners are incentivized to choose routes that will produce little opposition from local residents—but this often means routes that *have* few local residents along them. This often guarantees low ridership because the time and hassle of driving a car to a transit stop seldom justify not simply driving the whole way. Light rail planners also overvalue destinations such as airports, which appeal to the public out of proportion to their need for transit—many people think that a train to the airport is a nice idea, even if they end up using it rarely, if at all. Furthermore, the structure of many regional public transit authorities gives suburban municipalities disproportionate influence; they tend to demand long, uneconomical routes into car-oriented suburbs. Finally, planners often assume that stations in suburban areas will generate “transit-oriented development” that can serve as a source of riders, but the actual ridership in far-flung transit-oriented developments is typically disappointing.

Dallas provides excellent examples of all these tendencies. The DART board is heavily dominated by suburban interests that tend to demand investments to distant areas with residents who will not actually use the system;<sup>3</sup> DART’s least used stations, furthermore, were built at speculative transit-oriented developments—at which ridership typically stayed stagnant or even dropped somewhat after the development was complete. DART’s lowest-ridership lines are the ones that serve the two principal Dallas airports—and, to reach the airports, they run through several miles of unwalkable industrial parks and distribution centers.

The average speed of light rail lines is far less than that of freeways, even under the conditions of congestion

that prevail in many sprawling cities. Therefore, although rail lines are superior at serving short-distance travel within dense areas of development, they are inferior for the use to which they are frequently put—travel from distant suburbs. This is especially true if, as is commonly the case, light rail stations are surrounded by parking rather than by dense buildings: if you have to drive to get to the station anyway, driving all the way is almost always faster.

## Four Ways to Improve Transportation

There are better methods for improving transportation in low-density cities. We will address four methods—simple improvements to surface road networks, rationalizing public transit networks, introducing market mechanisms to road traffic, and urban design—which vary considerably in how much political controversy they are likely to cause.

First, many relatively simple improvements to surface road networks can be done for relatively low capital expenditures and without demolishing buildings or harming the pedestrian environment. For example, optimizing traffic signal timing can improve traffic flow on arterial roads considerably, including reductions of 10% or more in fuel consumption. One optimization project in California estimated a benefit-to-cost ratio of 58:1.<sup>4</sup> Converting ordinary intersections to roundabouts also carries substantial benefits in reducing delays as well as accidents, at least for those intersections without a single dominant direction for traffic flow.<sup>5</sup>

Second, boomtown cities should also consider rationalizing their public transit networks. Many Sunbelt cities have sparse bus networks whose individual routes are quite meandering, in an attempt to have each individual bus route connect as many destinations as possible. Attempts to change these routes can engender opposition from the small but vocal constituencies that enjoy one-seat rides, but bus routes that run on a regular grid pattern can cover far more territory and offer faster trips to a greater variety of destinations. Going from any point on the service area to any other, in the ideal case, would require transferring only once—and grid systems can often use fewer different routes to get the same coverage as more amorphous bus systems, thereby allowing greater frequency on each route. As an added bonus, grid systems with one bus line following each major street are easier to commit to memory. This approach to rationalizing bus networks has been

advocated perhaps most forcefully by Jarrett Walker, a prominent Portland-based transportation consultant and a leading advocate for the benefits of regular grid network designs.<sup>6</sup>

Third, there are more controversial approaches that involve introducing market mechanisms to road traffic. Most roads in the U.S., including most freeways, are untolled. Driving imposes costs on those besides the driver. First, of course, there are the costs of pollution—from the combustion of gasoline as well as less recognized sources such as microplastics from tire erosion. Second: every driver imposes costs on every other by making their journeys slower and more dangerous. These costs may be trivial for drivers joining a nearly empty road, but they rise considerably as traffic on the road grows: the vehicle that serves as the straw that breaks the camel's back and turns heavy but free-flowing traffic into a traffic jam may cost tens or hundreds of thousands of dollars' worth of others' time.

The classic economic solution to externalities like these is Pigouvian taxes, which place a surcharge on externality-generating activities equal to the cost of the externalities themselves. With a Pigouvian tax in place, the only people who will do externality-causing activities are those for whom the private profits of the activity exceed the public costs. Driving is already taxed to some degree, but in a way that does not correspond to the externalities. Federal and state gasoline taxes are the same whether one drives on an urban road that is near or over capacity (and near large populations affected by air pollution) or a rural one with plenty of capacity to spare. Far closer to the economic ideal would be road tolls that vary based on time of day, charging higher prices at rush hours and lower—or even no—tolls at slack times. Such variable pricing would keep freeways running faster and at higher capacity.

In general, converting existing roads into tolled roads is politically toxic, and the Interstate Highway Act generally prohibits tolls from being charged on most interstate freeway segments built with partial federal support.<sup>7</sup> One approach gets around these problems: instead of tolling existing highways, toll lanes (or “managed express” lanes) can be built in addition to the existing lanes. Such decisions are politically easier than reducing the number of general-purpose lanes. Instead of charging a flat toll, as most bridges or preexisting toll highways do, managed express lanes typically set dynamic tolls—this is the “managed” part—that change based on road conditions, increasing during rush hours and becoming much cheaper during slack times. The goal is to keep the toll lanes at their maximum free-flowing capacity.

Toll lanes have advantages, even for those who do not use them, and the typical toll—a few dollars—is quite affordable even to the working class. First, they provide reliable paths for mass transit, especially long-distance commuter bus services, allowing bus systems to be scheduled far more reliably and with less redundancy. Second, they can increase freeway capacity dramatically by providing a lane that is always guaranteed to be operating at maximum capacity. When a freeway gets congested, it is not only travel speeds that decline but also throughput in vehicles per second. By moving even a small fraction of vehicles off the open lanes of the freeway, therefore, additional uncongested tolled lanes can provide far greater increases in rush-hour capacity and less congestion even in the untolled lanes.<sup>8</sup>

Toll lanes can be profitable and thus built and financed entirely from toll revenues, including by private contractors—thereby insulating the public from the risks of construction cost overruns. Though express lanes are often built in the course of regular freeway widenings, they can also be built as elevated structures with support pillars placed in freeway medians, allowing their construction without any additional consumption of land at the margins of the existing freeway. Some cities have even experimented with tolled “queue-jumpers” at arterial intersections—short tunnels or flyovers that allow traffic in some arterial lanes to go over or under the intersections and that can be built within the existing right of way.<sup>9</sup>

Finally, the fourth possible type of solution lies in the realm of urban design—altering building and zoning codes to allow more people to live closer to major job centers. Such reforms will not render entire cities accessible without a car: the gap between current population densities and those that allow large-scale mass transit is far too large. But liberal land use can go a long way toward making at least portions of cities relatively accessible without a car.

Consider Houston, whose regulatory environment for redevelopment of residential areas is likely the friendliest of any large U.S. city. It has no formal zoning code that designates land for only certain economic uses, and the minimum lot size for new residential construction is extremely low, at 1,400 square feet. (Many provisions of other cities' zoning codes—such as minimum street widths, maximum lot coverage regulations, and off-street parking requirements—do appear in Houston's building codes and can be onerous at times, but the city is still relatively more permissive than almost all other large cities.) Houston has a small light rail system concentrated in central areas that has among the highest ridership per mile of any light rail system in a city largely built after the advent of modern zoning

codes. The Red Line, which serves downtown Houston’s most densely built neighborhoods (including some of the wealthiest), had a ridership of approximately 3,600 weekday riders per mile in December 2019.<sup>10</sup> (The system average is bogged down by the Green and Purple Lines, which were built through far less dense, but also poorer, neighborhoods because of equity concerns and garner only about 1,000 weekday riders per mile.)

Dense, market-driven developments near downtown are far superior to pockets of transit-oriented development around remote light rail stops. They are within walking distance of large clusters of jobs in city centers, which are still the most important job clusters even in decentralized cities. The jobs and other amenities that already exist in downtowns far exceed those that could, hypothetically, emerge in purpose-built transit-oriented development clusters. Ridership figures in these types of developments are typically disappointing. That shouldn’t be surprising: new custom-built developments don’t contain everything necessary to live. Residents will need cars to travel to anything not on their particular light rail line, and then—even after factoring in possible congestion and parking time—cars are typically faster than light rail lines for trips of more than a few miles.<sup>11</sup>

## Case Studies

To illustrate these ideas, what follows is an-depth look at five boomtwn cities, outlining the current state of development and travel patterns, as well as existing transportation infrastructure, current plans, and alternate investments that could be done better.

### *Dallas–Fort Worth, Texas*

#### ■ CURRENT STATUS

Dallas is especially instructional: it is the largest of the metropolitan regions covered here, and it has invested much money in an extensive light rail system—in fact, the longest in the U.S.—but its system well illustrates the limitations of light rail.

Development patterns in DFW show a clear favored quarter. To the north, northwest, and west of Dallas, the development frontier is roughly 30–40 miles out from central Dallas, a short distance beyond other important job centers such as Fort Worth, Denton, and Frisco. Development south and east of Dallas, on the other hand, extends substantially less far, only about

12–15 miles from downtown. The suburbs north and northwest of Dallas, as well as Dallas’s own northern residential areas, are the region’s wealthiest, and most of the area’s important secondary job centers—for example, the Legacy office park in Plano, home to several corporate headquarters—are also north of Dallas.

The Dallas freeway network is severely congested: of the 10 most congested freeway segments in Texas, three are in Dallas.<sup>12</sup> These three segments include one part of a freeway loop enclosing roughly 1.5 square miles of downtown Dallas; and two inner segments of Interstate 35 and US Route 75, which connect Dallas to the favored-quarter suburbs to the north and northwest. These freeways, notably, are not tolled; neither do they have “TEXpress”-managed express lanes common on other freeways in the Dallas–Fort Worth area. The severe congestion on US-75, moreover, stands in stark contrast to the much lighter congestion on the parallel Dallas North Tollway.

Dallas and Fort Worth have bus networks run by separate agencies. Although the DFW area generally has a regular grid of major arterial roads, the bus networks in Dallas only vaguely follow a grid pattern, and, in Fort Worth, the bus network is almost completely unrationalized. Local transit planners recognize this as a problem. DART has hired the aforementioned Jarrett Walker for a network redesign project.

The area has a large amount of largely unused light rail. DART operates four light rail lines converging on downtown Dallas, garnering low ridership per mile, even by U.S. standards. DFW light rail lines get low ridership because many of them serve low-value destinations such as airports, truck-oriented industrial zones, or isolated transit-oriented developments such as those discussed in the introduction, and because the lines extend far out into car-oriented suburbs where they cannot compete on speed with cars for trips to downtown Dallas. In addition, three heavy rail lines run diesel trains on repurposed or shared freight tracks: the Trinity Railway Express from Dallas to Fort Worth; the A-Train (functionally an extension of one of the light rail lines to Denton); and TexRail, from Fort Worth to the DFW airport. These new lines get extremely low ridership: TexRail got only one-sixth its projected ridership and cost \$800,000 per weekday rider in 2019 to build.

#### ■ WHAT IS BEING PLANNED?

A large slate of DFW freeway expansions will total more than \$3 billion over the next 10 years,<sup>13</sup> but most of the projects are not focused on the area’s most congested freeways. The most expensive items involve widening



part of Interstate 820 that constitutes the eastern leg of the freeway loop around Fort Worth; and widening part of Interstate 35 at the far northern fringes of the developed area of DFW to accommodate exurban development. Other DFW freeway expansion projects likewise focus on peripheral areas.

Rail projects in DFW are hardly any better prioritized. One project on DART's slate has been providing a second light rail tunnel through downtown, but that project has been put aside in favor of a new rail line connecting DFW airport to the northern suburbs of Dallas—which are largely affluent areas with little transit use. The projected rail line route, a reuse of an existing freight alignment, misses most of the large job centers in the area and will cost over \$200,000 per projected daily rider under 2019 ridership projections. (Even before the pandemic, ridership predictions for new DFW rail routes were routinely too high.)<sup>14</sup>

#### ■ WHAT SHOULD BE DONE INSTEAD?

Much of the outward expansion of the Dallas urban area—which necessitates expansions of exurban freeways—is the artifact of zoning policy that forbids redevelopment in the built-up area. Areas very close to downtown frequently have severe density restrictions, such as half-acre minimum lot sizes. Reducing such restrictions and allowing market-driven growth in this area could curb the need for exurban freeway expansions.

In any case, the exurbs are not where freeway decongestion is most needed. Instead, the existing network of TEXpress should be expanded to cover the freeways leading into Dallas from the north and northwest. As part of such a project, one could rationalize some of the downtown Dallas network by removing parts of it that are redundant and antiurban (not to mention accident-prone)—such as the northern portions of the inner freeway loop, which divides downtown from other dense residential neighborhoods and has long been recognized as a potential target for removal. Local activist organizations have made proposals along these lines, which would also free up dozens of blocks of highly valuable land for redevelopment.<sup>15</sup>

Further rail investments into suburbia should be halted, and the current frequency of service on certain economically marginal lines should be reevaluated. If there is a lasting need for additional rail service on some rail lines, the D2 rail tunnel through downtown Dallas might be justified, but the likely long-term decline in demand for rail transit makes this unlikely, and it may be better just to redistribute current service from less frequently used to more frequently used lines.

Finally, Dallas and Fort Worth could make certain commonsense improvements to their bus systems, which already have some routes with ridership numbers that rival those projected for the expensive new rail lines. Some possible improvements include making bus routes more direct and improving bus-stop amenities (some of Dallas's busiest bus stops lack even benches and rain shelters).

## Austin, Texas

#### ■ CURRENT STATUS

The Austin metropolitan area saw, by a comfortable margin, the fastest population growth of any metropolitan area in the U.S. in the 2010s, growing by almost 30% from 2010 to 2019.<sup>16</sup> This has resulted in large measure from the city's tech industry cluster, whose growth has been accelerated as of late by several high-profile corporations relocating from the Bay Area to Austin, drawn by the business-friendly climate and relative lack of Covid-19-related business restrictions.

In Austin, technology employment is heavily centered in downtown (although some newcomers, such as Apple, have invested in more suburban campuses), and the proximity to jobs and the University of Texas make central neighborhoods in general the most desirable. However, Austin's central developed areas generally have strict zoning—in most respects, the strictest of any of Texas's largest cities.<sup>17</sup> Several central neighborhoods, such as Old West Austin, are historic districts protecting mostly single-family homes built in the early twentieth century. Austin's highly restrictive housing policies have led to a doubling of metropolitan-wide average housing prices (before inflation adjustment) in the past decade—an increase far exceeding that of other major Texas cities.<sup>18</sup> The strictness of local zoning codes has instead displaced in-city redevelopment to traditionally poorer, majority African-American and Hispanic areas.

Now we'll look at transportation. Austin is situated on the north bank of the Colorado River; it and its suburbs have largely grown along Interstate 35, a freeway that runs from San Antonio north-northeast to Dallas and passes just east of Austin's downtown. Two other freeways feed downtown: US-290, which passes just south of downtown on the other side of the river; and the MoPac expressway (the name is a shortening of "Missouri Pacific," the railroad it follows), which runs to the west. MoPac has tolled express lanes, as does a segment of US-290 in East Austin, but Austin's other central freeways have neither toll nor HOV lanes.

I-35 near Austin’s city center is very narrow for the center of a large metropolitan region’s freeway network: mostly three lanes in each direction, or five, including the parallel frontage roads. It is perpetually congested in the daytime. In 2020, in fact, one central segment of I-35 was the most congested freeway segment in Texas, according to an annual report by the Texas AM Transportation Institute, with annual economic losses from congestion exceeding \$288 million.<sup>19</sup>

Austin’s current public transportation consists largely of a grid of buses following the metropolitan area’s major arterial roads as well as a diesel commuter rail line, Capital MetroRail, which runs along existing freight rail tracks from Austin city center to the northern suburbs and comprises nine stations on a 32-mile line. Capital MetroRail gets pitiful ridership: only 2,200 riders on an average weekday in 2019, according to APTA<sup>20</sup>—meaning that the average station has ridership comparable with the least used stations in the entire DART network.

#### ■ WHAT IS BEING PLANNED?

First, I-35 has long been recognized as a severe bottleneck not just in Austin’s freeway system but in all of Texas’s—even though a bypass toll road, the Pickle Parkway, was built in 1985. Correspondingly, the Texas Department of Transportation is planning a major expansion. The expansion has not been completely designed, but one design option shown in public documents and an official video rendering would have six lanes running in each direction on the main freeway—including two “managed” lanes open to high-occupancy vehicles, as well as a three-lane frontage road.<sup>21</sup> The project would require lowering the existing freeway into a trench, and the cost estimates are enormous: roughly \$8 billion. (For comparison, the private Texas Central high-speed rail project between Dallas and Houston is currently estimated at \$20 billion.)<sup>22</sup>

Meanwhile, Austin has enacted by plebiscite a large package of public transit improvements called Project Connect, comprising four new rail lines, a downtown rail tunnel, and expansions in bus service. Under the plan, the existing Red Line will be joined by a Green Line diesel train extending out to an arterial road junction to the east, at the fringe of Austin’s built-up area. The ridership projection for this line is extremely low: one agency official in 2018 forecast that the line would receive only 1,800 riders per day by 2025.<sup>23</sup>

Two new light rail lines are being planned, the Orange and Blue Lines. Both lines will run together north of downtown, along Lamar Boulevard, a major arterial, and then near the University of Texas and downtown

Austin. South of downtown, the Orange Line continues along Congress Avenue—another important arterial—while the Blue Line turns to the east and terminates at Austin Bergstrom International Airport, crossing largely undeveloped territory to get there. The plan includes several bus rapid transit and upgraded bus lines under the name “Metrorapid.”

#### ■ WHAT SHOULD BE DONE INSTEAD?

The flaws in Austin’s transit planning resemble the mistakes that Dallas has already made: costly suburban-focused transit extensions, including to low-value destinations such as airports. The amount that Austin plans to spend on freeway improvements, moreover, is enormous. A better approach, again, would be targeted investments focused on market principles. Much of the planned rail expansion—certainly including the Green Line and likely including the Blue Line light rail branch to the airport—should be canceled. Such a proposal might sound radical, but many far more cost-effective and superior transit options are likely available. For instance, because the Blue Line airport route runs largely through sparsely developed, unwalkable territory (meaning the value of intermediate stops is quite low), improved direct bus service could likely compete with cars on time. Currently, the only existing public bus to the airport makes many stops and takes 30 minutes for a trip between the airport and downtown that a car in free-flowing traffic could make in less than 15 minutes.

Rethinking the I-35 widening plan would also be advisable. Limiting the expansion to a pair of new toll lanes—which could be elevated, in the existing freeway footprint—would likely prove far less expensive and less disruptive to Austin’s urban fabric. Further relief to I-35 may be possible by reducing the toll on the Pickle Parkway, a parallel toll road through undeveloped land east of Austin that sees very little traffic. It is perverse to have an indirect road with lots of spare capacity charge a large toll while a direct, more crowded, route is free.

Whatever transit projects do get built should be accompanied by land-use changes to ensure maximum utility by encouraging high-density development around the new stations, not simply park-and-rides. One area ripe for improved land use is the Triangle State neighborhood, which is approximately a mile from the University of Texas and is slated to get a new light rail stop. Much of the neighborhood currently is a field developed only with scattered low-rise commercial and office buildings with low lot coverage.

## Atlanta, Georgia

### ■ CURRENT STATUS

The Atlanta metropolitan area presents unique transportation challenges. The area is extensive and has very low density—lower even than most other Sunbelt cities. Furthermore, the arterial roads in Atlanta follow an amorphous pattern rather than a regular grid, as in Dallas and Austin, making a coherent bus network difficult.

The design of the freeway network also deserves discussion. Besides the orbital 65-mile Perimeter Freeway, which diverts suburban and long-distance traffic from more crowded areas, most of Atlanta’s freeways run in radial directions toward and away from downtown. They all feed into a wide—but typically congested and accident-prone—four-mile “Downtown Connector” that runs past several of the city’s largest high-rise job centers. Some freeways have toll lanes but only those in the suburbs outside the Perimeter Freeway—in other words, not the ones that most need reliable congestion-free lanes.<sup>24</sup> The Downtown Connector also has an untolled HOV lane.

Atlanta is the only city in this report with a proper subway system, which runs full-length subway trains on routes completely separated from ground traffic. The Metropolitan Atlanta Rapid Transit Authority (MARTA) system comprises two trunk lines through downtown, one north–south and one east–west, and receives high-quality service, with each trunk line seeing eight trains per hour during weekday rush hours and business hours. It is, unfortunately, something of a wasted resource: many of its stations are surrounded by low-rise development. Atlanta’s bus network, compromised by the bad arterial design, is sparse and vaguely radially designed: a majority of its bus routes run toward and away from downtown, though often on rather indirect routes.

### ■ WHAT IS BEING PLANNED?

The Atlanta region plans to spend \$173 billion over the next 30 years on transportation improvements. A \$27 billion slate of road improvements includes upgraded interchanges and an expansion of the existing network of toll lanes. Those expansions are on relatively outlying freeways: the Perimeter Freeway and a portion outside the Perimeter Freeway of GA-400, which connects Atlanta to the favored-quarter suburbs to its north.<sup>25</sup>

The plan includes a few transit improvements, such as two light rail lines and a commuter rail line. The light rail lines include a partial conversion of a freight line to light rail along the Beltline—a corridor that already

hosts a successful public park—and the Clifton Corridor light rail line, which measures roughly eight miles, mostly reuses an existing freight rail alignment, and will connect two stations on the north and east MARTA branches, as well as Emory University and some stops in the suburb of Decatur. According to projections made in 2018, the full project will cost \$1.8–\$2.1 billion and garner 23,300 riders each day.<sup>26</sup> With the exception of Emory University, the environs of the planned line are low-density residential areas. The city also plans a commuter rail line from an outlying MARTA station to the very low-density exurbs of Jonesboro and Lovejoy in Clayton County, south of Atlanta—again repurposing an existing freight rail line.

### ■ WHAT SHOULD BE DONE INSTEAD?

The extreme low density of the Atlanta area, along with the lack of rational arterial road design, makes any more than marginal improvements to transit accessibility in Atlanta very expensive and difficult. Still, a number of fixes are worth consideration.

First, MARTA should take another look at its existing bus map. The general lack of rational planning of the Atlanta area’s arterial roads is a severe impediment to bus network design, but some improvement is possible. Many of the bus routes have substantial deviations from the main arterials and could possibly be straightened for faster and more efficient service. Likewise, many arterials that carry traffic in circumferential directions around Atlanta could be given consistent bus lines running all or most of their length. The planned light rail and commuter rail lines through low-density suburban areas should be canceled.

The growth of managed toll lanes is encouraging, but, like the existing toll lanes in Dallas, the planned toll lanes in Atlanta are concentrated in exurban areas where they are least needed. A much better project would be to provide toll lanes on the freeways inside the Perimeter Freeway and closer to the city center—ideally separate elevated lanes that would not be blocked by the area’s frequent accidents. These would allow easier paths for longer-distance commuter buses. Some even more extravagant investments may be possible. For example, a 2006 report from the Reason Foundation proposed building a freeway tunnel roughly 10 miles in length east of downtown, connecting the GA-400 and I-675 freeways and providing an alternate route for north–south traffic that does not touch the Downtown Connector. Despite the high cost, the author estimated that if it were tolled, the project could be profitable enough to attract private investment.<sup>27</sup>

Atlanta’s land-use authorities should clear away all obstacles to development around MARTA rail stops,

as MARTA—despite the system’s limited extent—does offer good access to the region’s largest job clusters. Such measures could not end car dependence, of course, but they could redirect some of the region’s population growth into areas that generate fewer car trips.

## Denver, Colorado

### ■ CURRENT STATUS

Denver, like Austin, has seen a massive growth in tech-sector employment, thanks to the proximity of the University of Colorado in nearby Boulder and because of tech workers from elsewhere drawn by an outdoor lifestyle facilitated by the nearby Rocky Mountains and by a relatively low (though quickly rising) cost of living compared with coastal urban areas such as New York and San Francisco. Unlike the other case studies, the Denver region (as well as nearby Boulder, a university town and another tech industry cluster about 24 miles to the northwest) has “urban growth boundaries” that limit the expansion of the area’s built footprints—a limitation scarcely alleviated by urban zoning laws, which impose strict caps on density.

Freeways in Denver are often congested. The most congested freeways are Interstate 25, which connects downtown to the areas to the north and south and carries longer-range traffic to Wyoming and New Mexico; and Interstate 270, which provides a bypass route for traffic going from north to east of downtown Denver. Interstate 70, a main connection to the eastern suburbs, is notably congested but less so than I-25. Some freeways have managed express lanes: I-25 north of downtown, one segment of the E-470 peripheral highway, and US-36, which connects Denver to Boulder.<sup>28</sup> (The managed express lanes on US-36 host a popular bus rapid transit service called the Flatiron Flyer, which runs half-hourly and travels from Denver to Boulder in just 51 minutes.)

The Denver region has an extensive network of light rail and commuter rail, most of it converging on downtown, but it receives generally low ridership. As urban-planning writer Christof Spieler has pointed out, the Denver rail system was focused on attracting “choice” riders who would otherwise be making city-to-suburb trips in cars. Denver-area rail lines, Spieler notes, typically follow easy alignments, sometimes being built in freeway medians as part of freeway expansion projects, that run vaguely near important destinations such as medical centers but are impractical to reach by foot.<sup>29</sup> Some light rail lines have been built to serve exurban transit-oriented developments that are

not yet near completion. Meanwhile, large amounts of accessible downtown land are wasted on low-value uses, such as the surface parking lot for a stadium that takes up dozens of acres of land near two central light rail stops.

### ■ WHAT IS BEING PLANNED?

There is a planned upgrade to the central segments of Interstate 70. This project, called the Central 70 Project, will reconstruct much of the freeway, add one tolled express lane in each direction, and make other improvements, such as lowering part of the freeway below-grade and capping it with a park.<sup>30</sup>

Denver’s Regional Transportation District plans three expansions of commuter or light rail, mostly focused on suburban areas. The Southwest Extension of the B Line, in planning since 2008, will extend a light rail line 2.5 miles to Highlands Ranch, a low-density residential and commercial development just outside the peripheral C-470 highway; the new terminal station will include 1,000 parking spaces.<sup>31</sup> An extension of a northwestern commuter rail stub line to Boulder, along a route largely redundant with the existing Flatiron Flyer, is also planned. The only central expansion is a 0.8-mile extension of the near-downtown L light rail line.<sup>32</sup> A long-planned bus rapid transit line will improve bus service on the Colfax Corridor, an important commercial artery whose existing bus gets more ridership than most of the city’s rail lines.

### ■ WHAT SHOULD BE DONE INSTEAD?

The L Line expansion may be viable, but further exurban rail expansions are a bad idea. The existing suburban trains already get very low ridership, and there is no reason to double down on failure. A train from Denver to Boulder—a long-term goal of local transit planners—is redundant with a currently very successful bus rapid transit project. A higher-speed regional rail line could become economical if ridership demand on the corridor increases drastically—to the point that the lower operational costs per passenger of rail outweigh the cheaper capital costs of bus service, especially as a reasonably direct rail line between the two cities already exists. But such a change would nevertheless likely require considerable infrastructure investment and should not be embarked on without clear signs of passenger demand.

As always, Denver should clear out all obstacles toward building more housing and commercial buildings downtown—especially in areas currently used for parking and low-value industry (Denver has substantial exclusive industrial zones in areas relatively close to downtown.) The inclusion of toll lanes in the Central 70 Project is well considered, and future highway projects

in the area should prioritize extending the existing toll lanes to a continuous network—especially on other severely congested freeways such as Interstate 270.

## Tampa, Florida

### ■ CURRENT STATUS

The Tampa metropolitan area can be divided into two parts: Hillsborough County, which lies on the east side of Tampa Bay and contains Tampa itself; and Pinellas County, on the peninsula that bounds Tampa Bay to the west and whose principal cities are Clearwater and Saint Petersburg. (Tampa's northern exurbs sprawl across the border into Pasco County.) The main freeway through Tampa and Saint Petersburg is Interstate 275, which connects Tampa to its northern suburbs and is typically moderately congested near downtown. The Lee Selmon Expressway connects Tampa with its eastern suburbs and has virtually no congestion—thanks largely to a three-lane viaduct built in the freeway median that carries tolled traffic in the peak direction; it was built by a private operator at no financial risk to the public.

Tampa is the only one of these five cities without substantial rail transit: a preserved 2.7-mile streetcar line running historic rolling stock acts only as a circulator for the downtown and an adjacent historic neighborhood. The rest of Tampa's transportation is handled by bus. Hillsborough County's transit authority runs a largely coherent bus grid with lines along arterials downtown and in the denser neighborhoods to the north and west.

### ■ WHAT IS BEING PLANNED?

On the transit side, there are no plans for substantial light rail investments. A planned intercounty light rail line mooted for much of the 2010s was scrapped in 2018, replaced by a plan for rapid buses.<sup>33</sup> (Few buses run through from Pinellas to Hillsborough County, and none runs between urban centers at a speed sufficient to compete with driving a private car.) According to current plans, a bus rapid transit line will run mostly on I-275, in new dedicated lanes in the freeway median. Stations would also be built on the freeway median so that the bus would not have to exit. The project would cost \$353 million for an estimated 5,400 riders per day—quite a high cost per projected rider for a bus line—and would not be complete for another decade.<sup>34</sup>

Several freeway widenings are planned for the Tampa area. Florida's Department of Transportation has a wide-ranging plan to improve capacity on the region's freeways, including almost 100 new miles on toll lanes

on all freeway segments being rebuilt, the exception being a segment of Interstate 275 north of downtown Tampa—perversely, one of the most congested segments in the entire network.<sup>35</sup> Expansion of this segment of I-275, especially with toll lanes, provoked severe neighborhood opposition, largely because widenings would be destructive to many lower-income, heavily racial minority communities.<sup>36</sup> One earlier freeway plan was estimated in 2016 to cost \$6 billion for 90 miles of freeway upgrades.<sup>37</sup>

### ■ WHAT SHOULD BE DONE INSTEAD?

Tampa is one city in which light rail investments might have made sense in the abstract. The long crossings of Tampa Bay between Hillsborough and Pinellas Counties serve as natural chokepoints, and chokepoints speak in favor of high-capacity transportation options. It would have been prudent to have left space for possible rail transit when building the crossings. However, given that the current bridges are road-only and provide no room to add a rail deck, rail construction is likely uneconomical. Expansion of light rail within downtown Tampa itself may be worth considering: some near-downtown areas—such as the areas just north of downtown along Tampa Street and Florida Avenue—have seen substantial amounts of new mid- and high-rise residential development. As always, additional infill development near existing urban centers in downtown Tampa would aid this goal.

Bus rapid transit along I-275, in order to fill a gap in current bus service between the metropolitan area's major centers, is a good idea, but improvements to such service shouldn't have to wait until the completion of a dedicated lane. And the line's low ridership projections ought to bring into question whether hundreds of millions of dollars in capital expenditures on dedicated lanes and stations are worthwhile. As an interim measure and to test transit demand, the Tampa area's mass-transit providers could start running express buses now between the area's major centers, especially downtown Tampa and Saint Petersburg, without waiting for upgrades.

The focus on toll lanes in new freeway widenings is good, but in many cases—especially I-275 near downtown Tampa—concerns about community impacts have validity. It may be worth investigating whether it would be feasible from an engineering standpoint to place new toll lanes in an elevated structure instead, on the model of the Lee Selmon Expressway. Such a plan would have visual impacts but would not damage the neighborhood fabric nearly as much.

## Conclusion

The transit situation in these five boomtown cities suggests a few key policy recommendations. First, new toll lanes should be preferred to brute-force and less effective expansions of untolled freeways, especially in areas with expensive land. Second, new rail transit expansions should be treated with extreme skepticism, especially when they are built to serve future, not present, development. Third, we should liberalize zoning in areas with high demand where more growth will place fewer strains on the outlying road network, especially near downtown areas.

One overarching principle is in play here: land-use and transportation planning work best when they are tied most closely to actual demand—and this means, above all, trusting market mechanisms. Financing new road construction out of tolls, for example, naturally balances the costs and benefits of new construction. The most beneficial new road projects are those that people would be willing to pay tolls to use. Similarly, since people naturally want to live near job opportunities, relaxing zoning to allow more construction near job centers can relieve strain on the transportation network from long-distance commutes. Conversely, blind expansions of underused mass transit roads or overly congested roads—whose congestion is frequently the consequence of irrational road tolling schemes—tend to be poorly targeted.

To close, here is a brief list of suggestions that state and federal policymakers can use to improve transit decisions and land-use planning.

*Repeal restrictions on tolling existing roads.* Prohibition of tolls on interstate highways has not only led to severe freeway overcrowding; it has suppressed market indications of investments in new road capacity and led to situations in which, for example, direct freeways are free but longer detours cost money. Moreover, as cars become more fuel-efficient in the next several years—and the stock of electric and other non-gasoline-consuming vehicles increases—sole reliance on the gasoline tax as a source of highway funding is likely to lead to shortfalls.

*Tie mass-transit funding decisions to existing density.* Many bad investments in rail transit—recent DART expansions are examples—have been based on drastically inflated estimates of ridership. These estimates often depend on unrealistic estimates of the number of riders that will be provided by new development along the route. At least on a relatively crude systemwide level, furthermore, it is possible to estimate the ridership of transit systems relatively well simply by observing the number of jobs and residents within walking distance of the stations. State and federal government agencies that provide money to fund transit expansions should consider tying funding decisions to existing development patterns—and only funding new systems or lines in areas with sufficient existing population and job density.

*Consider state zoning preemption laws near transit and large job clusters.* In California, a state with a severe housing shortage in its urban areas, the state has repeatedly come close to passing significant housing liberalization in areas near transit stops. Though Sunbelt cities do not have housing crises on the scale of California’s, many of them—especially Austin and Denver—have seen significantly increased housing prices, especially in central areas near downtown. These areas often have the strongest entrenched lobbies for housing shortages: affluent single-family homeowners in desirable areas who have received windfall profits from restrictive zoning. Local zoning debates—which typically give incumbent homeowners outsize influence—privilege them. But the best interests of cities as a whole are likely better served by removing these zoning decisions to the state level—where officials can recognize that liberal development in downtowns can help increase urban areas’ economic productivity and reduce the need for additional spending on exurban infrastructure.

# Endnotes

- <sup>1</sup> Sheryll Cashin, "Localism, Self-Interest, and the Tyranny of the Favored Quarter: Addressing the Barriers to New Regionalism," *Georgetown Law Journal* 88, no. 7 (July 2000): 1985–2048.
- <sup>2</sup> American Public Transportation Association (APTA), "Public Transportation Ridership Report, Fourth Quarter 2019," Feb. 27, 2020.
- <sup>3</sup> Jim Schutze, "Dallas Needs to Do a Tammy Wynette on DART—D-I-V-O-R-C-E," *Dallas Observer*, Feb. 13, 2020.
- <sup>4</sup> Sam Staley and Adrian Moore, *Mobility First* (Lanham, MD: Rowman & Littlefield, 2009), p. 146.
- <sup>5</sup> Washington State Dept. of Transportation, "Roundabout Benefits."
- <sup>6</sup> Jarrett Walker, *Human Transit: How Clearer Thinking About Public Transit Can Enrich Our Communities and Our Lives* (Washington, D.C.: Island Press, 2012), pp. 168–74.
- <sup>7</sup> U.S. Dept. of Transportation, Federal Highway Administration, "Why Does the Interstate System Include Toll Facilities?"
- <sup>8</sup> See, e.g., the schematic diagrams in Fred L. Hall, "Traffic Stream Characteristics," in "Traffic Flow Theory: A State-of-the-Art Report," Committee on Traffic Flow Theory and Characteristics, rev. 2001.
- <sup>9</sup> Staley and Moore, *Mobility First*, p. 107.
- <sup>10</sup> Data available at Metropolitan Transit Authority of Harris County, "December 2019 Monthly Ridership Report."
- <sup>11</sup> Staley and Moore, *Mobility First*, pp. 155–56.
- <sup>12</sup> Texas A&M Transportation Institute, "Texas' Most Congested Roadways, 2020."
- <sup>13</sup> Ben Russell, "Massive Highway Projects Planned for North Texas," NBC Dallas–Fort Worth, Sept. 11, 2019.
- <sup>14</sup> Connor Harris and Nathaniel Barrett, "Dallas–Fort Worth's Sprawling Rail Networks Haven't Worked, So Here's a Better Idea," *Fort Worth Star-Telegram*, Feb. 7, 2020.
- <sup>15</sup> A New Dallas, "Our Vision."
- <sup>16</sup> Statista, "The Fastest Growing Metropolitan Areas in the United States from 2010 to 2019," March 2020.
- <sup>17</sup> Connor Harris, "Lone Star Slowdown?: How Land-Use Regulation Threatens the Future of Texas," Manhattan Institute, Dec. 13, 2018.
- <sup>18</sup> Zillow Home Value Index (ZHVI), All Homes (SFR/Condo/Co-op), Time Series, Smoothed, Seasonally Adjusted (\$), Cities.
- <sup>19</sup> Texas A&M Transportation Institute, "Texas' Most Congested Roadways, 2020."
- <sup>20</sup> APTA, "Public Transportation Ridership Report, Fourth Quarter 2019."
- <sup>21</sup> Philip Jankowski, "I-35 Changes Dramatically in Txdot's Proposed \$8 Billion Expansion," *Austin American-Statesman*, May 7, 2019.
- <sup>22</sup> Shawn Arraji, "Texas Central Weighing Use of Federal Stimulus Money for High-Speed Rail Project," *Community Impact Newspaper*, June 11, 2020.
- <sup>23</sup> Caleb Pritchard, "Green Line Creeps Forward at Commissioners Court," *Austin Monitor*, Apr. 4, 2018.
- <sup>24</sup> "Map: New Interstate Toll Lanes in Metro Atlanta," *Atlanta Journal-Constitution*.
- <sup>25</sup> For the list of projects, see Georgia Dept. of Transportation, "Express Lanes."
- <sup>26</sup> Metropolitan Atlanta Rapid Transit Authority (MARTA), "Clifton Corridor Overview."
- <sup>27</sup> Robert Poole, "Reducing Congestion in Atlanta," Reason Foundation, Nov. 1, 2006.
- <sup>28</sup> E-470 Public Highway Authority, "A Guide to Colorado Toll Roads."
- <sup>29</sup> Christof Spieler, *Trains, Buses, People: An Opinionated Atlas of US Transit* (Washington, D.C.: Island Press, 2018), p. 152; Andy Bosselman, "Denver's Buses and Trains Are Not Useful to Most People. A New Book Shows Why," *Streetsblog Denver*, Jan. 29, 2019.
- <sup>30</sup> Colorado Dept. of Transportation, "Central 70 Project."
- <sup>31</sup> Denver Regional Transportation District (RTD), "Southwest Rail Extension, 2016 Fact Sheet."
- <sup>32</sup> RTD, "The Future of the L Line."
- <sup>33</sup> Caitlin Johnston, "Tampa Bay's Transit Future: Light Rail's Out. Rapid Buses Are In," *Tampa Bay Times*, Jan. 11, 2018.
- <sup>34</sup> Caitlin Johnston, "Tampa Bay Riders to Wait 10 Years for Regional Bus Transit Line," *Tampa Bay Times*, Jan. 22, 2021.
- <sup>35</sup> Caitlin Johnston, "What's All That Road Construction for in the Gateway Area? Mostly Tolls," *Tampa Bay Times*, Feb. 6, 2021.
- <sup>36</sup> C. T. Bowen, "Widening Interstate 275 Still Part of Hillsborough Transportation Plan," *Tampa Bay Times*, July 1, 2020.
- <sup>37</sup> Angie Schmitt, "Massive Highway Expansion Threatens to Destroy Tampa Neighborhoods," *Streetsblog USA*, June 21, 2016.

